CCD-V8E

SERVICE MANUAL

AEP Model

March, 1985

Video 8

SPECIFICATION

System

Video recording system	Rotary two heads, Helical scanning FM system
Audio recording system	Rotary head, FM system
Video signal	PAL colour, CCIR standards
Usable cassettes	Cassettes having the mark 8
Tape speed	SP: Approx. 20.051 mm/sec. LP: Approx. 10.058 mm/sec.
Recording or playback time	SP: 90 min. (P5–90) LP: 180 min. (P5–90)
Fast forward time	Approx. 3 min.
Image device	CCD (Charge Coupled Device)
Viewfinder	Electric viewfinder (1″ black and white)
Lens	Combined 6 × power zoom lens f = 12–72 mm F1.4 (telephoto F1.8) with macro Filter diameter: 46 mm
Colour temperature	Preset values: ☼ 5,800°K 💡 3,200°K Auto: From the light at a tungsten lamp to the light on a slightly overcast day.
Minimum illumination	22 lux (F1.4) (2 footcandles)
Illumination range	22 lux–100,000 lux (2–9,294 footcandles)
Recommended illumination	More than 300 lux (28 footcandles)
Aperture correction	Approx. ±1.5

Input and output connector

MULTI CONNECTOR 24-pin	Video input: 1 Vp-p, 75 ohms unbalanced, sync negative Video output: 1 Vp-p, 75 ohms unbalanced, sync negative Audio input: −6 dBs, input impedance more than 47 kilohms Audio output: −6 dBs, output impedance less than 1 kilohms
Earpiece jack	Minijack, 8-ohm impedance
Remote jack	5-pin connector
MIC jack	Minijack, −60 dBs, low impedance

General

Power requirements	MULTI connector 8.5 V Battery holder 6 V/8.5 V
Power consumption	7.0W (camera recording) including the viewfinder
Installation	Horizontally, vertically
Operating temperature	0°C to 40°C (32°F to 104°F)
Storage temperature	−20°C to +60°C (−4°F to 140°F)
Dimensions	Approx. 117 × 193 × 344 mm (w/h/d) (4 5/8 × 7 5/8 × 13 5/8 in.)

— Continued on next page —

MICROFILM

Consumer VIDEO

8 VIDEO CAMERA RECORDER

SONY®

Weight	Approx. 2 kg (4 lb 6 oz) excluding the battery and cassette Approx. 2.3 kg (5 lb 1 oz) including the battery and cassette
Microphone	Electret condenser microphone, uni-directional monaural type

Accessories supplied

Shoulder strap (1)
Camera head cover (1)
Sticker (1)

Optional accessories

Tuner timer unit TT-V8EC, AC power adaptor AC-V8E, Battery pack NP-22, DC pack DCP-85, Car battery cord DCC-16AE, External microphone shoe SAD-100, Remote Commander RM-84, Cable attachment VMC-540, Cable VMC-262M (2 phono plugs to 6-pin connector), VMC-2104M (2 phono plugs to 21-pin connector), VMC-2106S (3 phono plugs to 21-pin connector), VMC-600M/601M (2 phono plugs to 2 phono plugs), VMC-602MS/603MS (2 phono plugs to 3 phono plugs)

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

TABLE OF CONTENTS

Section *Title* *Page*

1. GENERAL

1-1. Location and Function of Parts and Controls . . 5
1-2. Power Sources 8
1-3. Cassette Care 11
1-4. Camera Recording 12
1-5. Focus 15
1-6. Zooming 16
1-7. Iris Adjustment 16
1-8. Close-Ups (Macro) 17
1-9. Use of the Microphone 17
1-10. Playback of the Recorded Tape 18
1-11. Use of the Tape Counter 22
1-12. TV Program Recording 23
1-13. Editing 27
1-14. Insert Recording 28
1-15. Notes on Moisture Condensation 29

2. DISASSEMBLY

2-1. Removal of the Battery Pack 30
2-2. Removal of the Cassette Lid Assembly 30
2-3. Removal of the Cabinet 31
2-4. Removal of the MA-12 Board 33
2-5. Separation of the VTR Assembly and Camera Assembly 33
2-6. Removal of the Control Panel 34
2-7. Opening of the HS-5 Board and the DC-DC Converter (VTR) 35
2-8. Opening of the AR-2 Board 35
2-9. Opening of the SV-14 Board 36
2-10. Opening of the VI-7 Board 36
2-11. Removal of the MC-8 Board 37
2-12. Removal of the RS-5 Board 37
2-13. Removal of the Cassette Compartment Assembly 38
2-14. Removal of the ZM-2 Board 39
2-15. Removal of the (Upper and Lower) Shield Cases 40
2-16. Opening of the AW-2 and the ME-2 Boards . . . 41
2-17. Internal View 42

3. DIAGRAMS

3-1. Circuit Boards Location 43
3-2. Overall Block Diagram 44
3-3. Camera System Block Diagram 47
3-4. Video System Block Diagram 51
3-5. Video/Audio Block Diagram 54
3-6. Audio Level Diagram 56
3-7. Servo Block Diagram 57

Section *Title* *Page*

3-8. System Control Block Diagram 60
3-9. System Control – Camera, Video and Audio Block Interface 63
3-10. Mechanism Control CPU – Servo Block Interface 63
3-11. System Control – Mechanism Block Interface . 64
3-12. Mode Switch Pattern 64
3-13. Loading Switch Pattern 64
3-14. Drum Phase System Timing Chart 65
3-15. Drum FG, Drum PG Timing Chart 65
3-16. Drum Speed System Timing Chart 66
3-17. Capstan Servo Operation (MC-8 and VI-7 Boards) 66
3-18. Programmable Frequency Divider (IC602) Operation (MC-8 Board) 66
3-19. ATF Servo Pilot Signal (VI-7 Board) 67
3-20. ATF Servo Timing Chart (REC) 67
3-21. ATF Servo Timing Chart (PB) 68
3-22. ATF Servo Timing Chart (CUE: x 9) 68
3-23. ATF Servo Timing Chart (REVIEW: x –7) . . . 69
3-24. ATF Servo Timing Chart (REVERSE: x –1) . . 69
3-25. Power Supply Block Diagram 70
3-26. View Finder Block Diagram 72
3-27. Timing Generator (IC707) Terminal Functions (CP-11 Board) 75
3-28. SYNC Generator (IC708) Terminal Functions (CP-11 Board) 76
3-29. Mode Control CPU (IC601) Terminal Functions (SK-4 Board) 77
3-30. Mechanism Control CPU (IC601) Terminal Functions (MC-8 Board) 78
3-31. Communication Control CPU (IC603) Terminal Functions (DS-8 Board) 79
3-32. Serial-In/Parallel-Out for Audio/Video Signal (IC107) Terminal Functions (VI-7 Board) 79

4. SCHEMATIC DIAGRAM AND PRINTED WIRING BOARDS

4-1. Frame Schematic Diagram 81
4-2. ZM-2, RR-9, CP-11, OS-2, VR-9, DR-30, ME-2 and EF-3 Boards 86
4-3. AW-2 Board 96
4-4. VI-7, FU-34, HS-5, FE-4 and EX-1 Boards . . . 104
4-5. MC-8, SV-14, MS-4, LS-9, LD-1 and RS-5 Boards 114
4-6. SK-4 and DS-8 Boards 126
4-7. MA-12, MJ-6, AR-2 and EP-2 Boards 132
4-8. VF-4, TL-15 and TL-16 Boards 138
4-9. Semiconductors 143

Section *Title* *Page*

5. EXPLODED VIEWS

5-1. Cover Assembly 145
5-2. Cabinet (Left) Assembly 146
5-3. Control Panel, Cabinet (Upper, Right) Assembly 147
5-4. Main Board Assembly 148
5-5. Cassette Compartment Assembly 149
5-6. Chassis Assembly 1 150
5-7. Chassis Assembly 2 151
5-8. Chassis Assembly 3 152
5-9. Chassis Assembly 4 153
5-10. Camera Assembly 154
5-11. EVF (VF-206) Assembly 155
5-12. Hardware List 156

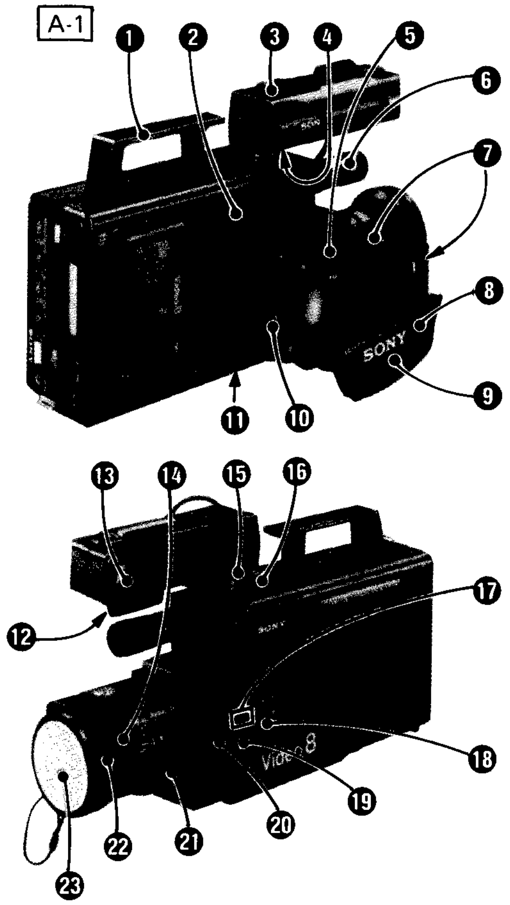
6. ELECTRICAL PARTS LIST 157

7. ADJUSTMENT 183

SECTION 1
GENERAL

1-1. LOCATION AND FUNCTION OF PARTS AND CONTROLS A-1

A-1



For details on the use of each control, refer to the pages indicated in the brackets.

① Handle

② VIEWFINDER jack
Connect the plug of the viewfinder cable.

③ Accessory shoe [P. 17]
Attach an optional external microphone or video light (up to 500 g, 2 lb).

④ ☼ (brightness) control screw (blue screw on the bottom of the viewfinder)
Turn with a Philips screwdriver to adjust the brightness of the viewfinder screen, if necessary.

⑤ Power zoom button [P. 16]
Press for smooth power zooming between wide-angle (W) and telephoto (T) positions.

⑥ Microphone [P. 17]
Sound is recorded simultaneously while shooting.

⑦ BATTERY compartment and battery ejector

Insert an NP-22 battery pack, ACP-85E ac pack or DCP-85 dc pack with the metal terminals facing the unit.
To remove the battery pack, ac pack or dc pack, push the bottom of the pack and at the same time slide the ejector in the direction of the arrow. The pack will then slide out.

⑧ Lens cap hook
Snap the lens cap here when it is not in use.

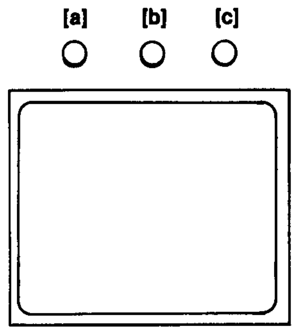
⑨ Grip strap
Adjust this so that your fingertips can easily manipulate the START/STOP button.

⑩ START/STOP button [P. 10, P. 13]
Press to start or stop camera recording.

⑪ Tripod receptacle
Attach an optional tripod (U1/4″ × 20 UNC).

⑫ Viewfinder lens adjustment lever [P. 12]
Adjust to your eyesight to assure good focus. Be sure to adjust when shooting for the first time or after another person has used the camera.

⑬ Electric viewfinder
The lamps inside the viewfinder light or blink during camera recording.



[a] **Low light lamp (yellow):** Lights when the light is insufficient.
[b] **Tape run/battery lamp (red):** Functions when the camera section is turned on. Lights steadily during recording.
Blinks when the inserted battery is exhausted, when the tape comes to an end, or when the tab on the inserted cassette is set to prevent erasure of a recording.
[c] **White balance lamp (orange):** Functions when the low light lamp is not lit. Lights steadily when the WHITE BALANCE switch is set to ☼ or 💡 .
Blinks when the white balance is not adjusted. Goes out when the WHITE BALANCE switch is set to ┌■ , and the white balance has been adjusted.

⑭ Focus ring [P. 13, P. 15]
Turn the ring to focus while looking through the viewfinder.

⑮ Viewfinder slide button
When you use your left eye, press this button and pull the viewfinder in the direction of the arrow until it locks. You can also remove the viewfinder.

⑯ Viewfinder turn button
To replace the electric viewfinder, press this button to release the lock and turn the viewfinder.

⑰ CAMERA POWER switch and lamp [P. 9]
Slide to the right to turn on the camera section. The lamp lights up. The recorder section is turned on simultaneously if it has not been powered yet. However, at this point the function buttons on the recorder section, except for the EJECT button, will not work so that the recording operation is protected.
When the CAMERA POWER switch is turned on after pressing the VTR POWER switch, all the function buttons will work.
To turn off the entire unit, slide again and the lamp goes off.
When a TT-V8EC tuner timer unit is connected, this switch does not function.

⑱ ⇆ REC REVIEW button [P. 14]
Press when the unit is set in the CAMERA mode or VTR-CAMERA mode, and then is set in the pause mode during recording, to review the last few seconds of the recorded picture.

⑲ Aperture switch [P. 16]
The amount of light entering the camera is determined by this switch.
■ (centre): Normally set to this position.
BACK LIGHT: Set to this position when the subject is back lit.
HIGH LIGHT: Set to this position when the subject is too brightly lit against the background.

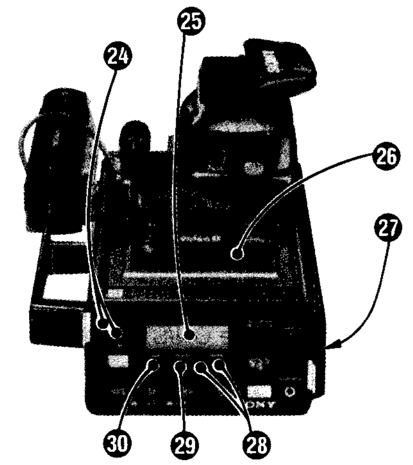
⑳ WHITE BALANCE switch
To adjust white balance slide the switch all the way down and return it to the automatic position (┌■), or set it to the proper position according to the prevailing light conditions.
☼ : Sunlignt (outdoors)
💡 : Artificial light (indoors)
┌■ : Automatically adjusted

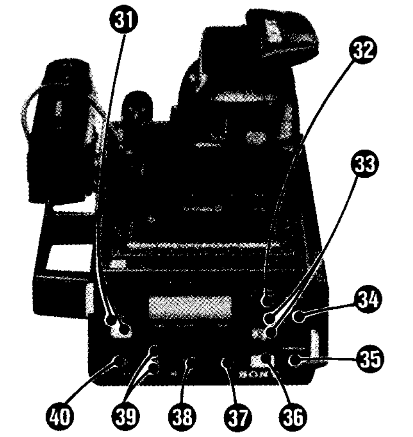
㉑ Manual zoom lever [P. 13, P. 16, P. 17]
Turn the zoom lever for manual zooming between the wide-angle and telephoto positions. For close-ups, pull the lever out and turn the ring to the MACRO position.

㉒ Lens hood [P. 17]
Usually attached to the lens ring. Remove when shooting close-ups or using a filter. Push in when the camera head cover is attached.

㉓ White lens cap [P. 12]

A-2

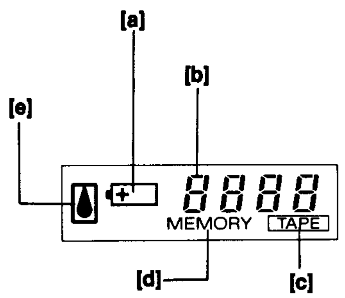




A-2

㉔ VTR POWER switch and lamp [P. 9, P. 10]
Press to turn on the recorder section. The lamp lights up. Press again to turn it off. When an AC-V8E ac power adaptor or a TT V8EC tuner timer unit is connected, use the power switch of the connected unit as this switch does not function.

㉕ Display window



- [a] Blinks when the inserted battery is exhausted.
- [b] The counter changes as the tape moves.
- [c] Blinks when the recorder is in the CAMERA mode and no cassette is inserted, the recorder is in the CAMERA mode and the tab on the cassette is out, or the tape comes to an end during recording.
- [d] Indicates that the MEMORY function is activated.
- [e] Blinks when the moisture has condensed inside the unit.

㉖ Cassette holder

㉗ MULTI CONNECTOR [P. 18]
Connect to an RFU-85 RFU adaptor, an AC-V8E ac power adaptor or TT-V8EC tuner timer unit. To open the lid, slide it in the direction of the arrow.

㉘ INSERT button and lamp [P. 28]
Press to insert a recording onto a previously-recorded tape when the recorder is set in the playback pause mode. The lamp lights during operation.

㉙ MEMORY button [P. 28]
To return the tape to the "0000" point, press this button and the MEMORY mark appears. Then press the ◀◀ or ▶▶ button. On insert recording, the recording stops automatically at the "0000" point.

㉚ RESET button [P. 22, P. 28]
Press to reset the counter to "0000".

㉛ EJECT button and lamp [P. 11]
On cassette insertion or ejection, slide down this button after turning on the unit and the cassette compartment will pop up.

㉜ REC MODE switch [P. 12]
This selects the recording speed, SP or LP. The recording time of a cassette in the LP mode is 2 times that in the SP mode.
The playback speed is automatically set regardless of the position of this switch.

㉝ ● (record) switch and lamp [P. 10]
Slide to the right to start recording when only the recorder section is turned on. The lamp lights. When the CAMERA POWER switch is turned on after turning on the recorder section, the recorder is set in the recording pause mode by sliding this switch. To start recording, press the ❚❚ or START/STOP button. When only the camera section is turned on, this switch does not function.

㉞ REMOTE connector (5-pin)
Connect a wired Remote Commander RM-84.

㉟ EARPIECE jack (mini type) [P. 14]
Connect an earpiece to monitor the sound being recorded during camera or insert recording, or the playback sound while viewing the playback picture in the viewfinder.

㊱ ❚❚ (pause) button and lamp
Press to stop the tape for a moment during recording or playback. The lamp lights. During playback of a recorded tape, a still picture is obtained. Press again to release the pause mode.

㊲ ■ (stop) button
Press to stop the tape.

㊳ ▶▶ (fast forward) button
Press to advance the tape. Pressing this button during playback lets you see a high-speed playback.

㊴ ▶ (play) button and lamp
Press to play back a tape.

㊵ ◀◀ (rewind) button
Press to wind the tape back. Pressing this button during playback lets you see a high-speed playback in reverse.

1-2. POWER SOURCES

SELECTION OF POWER SOURCES

Operate the unit on one of the following power sources. This manual shows the operations on the battery pack, the ac pack and the car battery. For operation on other power sources, see the instruction manual furnished with the equipment to be used.

Place	Power source	Accessory to be used
Indoors	House current	AC pack ACP-85E
		AC power adaptor AC-V8E
		Tuner timer unit TT-V8EC
Outdoors	Battery pack	Battery pack NP-22
In the car	12 V or 24 V car battery	DC pack DCP-85 and car battery cord DCC-16AE

When the TT-V8EC is connected
The following operations are possible.

- Power supply for the CCD-V8E
- Battery charge
- Playback of a tape
- TV programme recording
- Timer recording
- Tape editing

For details on connections and operations, please read the instruction manual furnished with the TT-V8EC.

When the AC-V8E is connected
The following operations are possible.

- Power supply for the CCD-V8E
- Battery charge
- Playback and recording of a tape
- Tape editing

For details on connections and operations, please read the instruction manual furnished with the AC-V8E.

THREE MODES OF OPERATION

The CCD-V8E video camera recorder is equipped with two power switches, the CAMERA POWER switch and VTR POWER switch. Press either or both of these switches according to the operating modes below.

Modes and their uses

Operating mode	Power switch to press	Section to be turned on	Operable buttons	Power switch to turn off
CAMERA mode Useful for camera recording. (The buttons irrelevant for recording will not work when pressed.)	CAMERA POWER switch	Camera section and recorder section	REC MODE START/STOP REC REVIEW Power zoom WHITE BALANCE Aperture EJECT RESET MEMORY	CAMERA POWER switch
VTR mode Useful for playback or TV programme recording. The camera section's power is saved. If the CAMERA POWER switch is pressed during the VTR mode, the recorder will enter the VTR-CAMERA mode.	VTR POWER switch	Recorder section	REC MODE EJECT ◀◀ ▶ ▶▶ ■ ❚❚ ● RESET MEMORY INSERT	VTR POWER switch
VTR-CAMERA mode Useful for playback during camera recording or insert camera recording.	VTR POWER switch first and CAMERA POWER switch	Recorder section and camera section	all buttons	VTR POWER switch or CAMERA POWER switch

Note

To turn on the recorder section during CAMERA mode, first slide the CAMERA POWER switch to turn off the camera section and then press the VTR POWER switch.

When an AC-V8E ac power adaptor is connected

The VTR POWER switch of the CCD-V8E video camera recorder will not work. **To turn the video camera recorder on or off, use the VTR POWER switch of the AC-V8E ac power adaptor.**
Press the VTR POWER switch of the ac power adaptor so that the recorder section of the video camera recorder will be turned on for the VTR mode. To turn on the camera section too for the VTR-CAMERA mode, slide the CAMERA POWER switch on the recorder. To turn off only the camera section, slide the CAMERA POWER swich again. To turn off the entire unit, press the VTR POWER switch on the ac power adaptor.
The video camera recorder cannot be set in the CAMERA mode with the adaptor connected.

When a TT-V8EC tuner timer unit is connected

The VTR POWER switch and the CAMERA POWER switch of the CCD-V8E video camera recorder will not work. To turn the video camera recorder on or off, use the ON/STANDBY switch of the TT-V8EC tuner timer unit. The video camera recorder cannot be set in the CAMERA mode with the tuner timer unit connected.

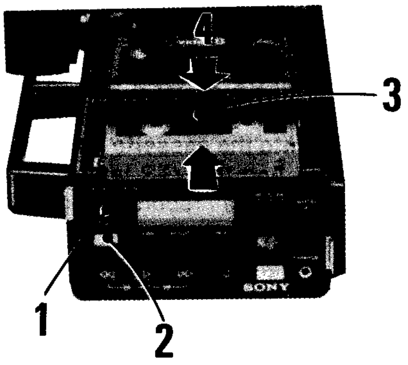
Recording operation of each mode

Operating mode	How to record
CAMERA mode	When the CAMERA POWER switch is turned on, this unit is automatically set in the recording pause mode. Press the START/STOP button to start recording.
VTR mode	Slide the ● switch to start recording.
VTR-CAMERA mode	When the ● switch is slid, this unit is set in the recording pause mode. Press the ❚❚ or START/STOP button to start recording.

1-3. CASSETTE CARE

Use a video cassette having the mark 8 . Always insert a cassette in the correct direction. Never insert it upside down.

B-1



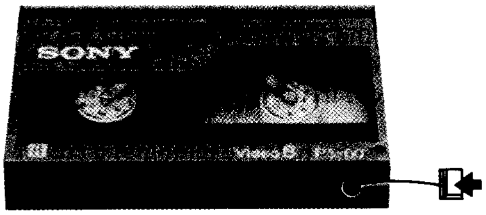
CASSETTE INSERTION B-1

1 Turn on the power. (See page 9. Any operating mode is usable.)
2 Press the EJECT button and the cassette compartment will pop up.
3 Insert a cassette with the window upwards and the arrow mark in front.
4 Push down the cassette compartment.

CASSETTE EJECTION

1 Turn on the power.
2 Press the EJECT button.
3 Take the cassette out and push down the cassette compartment.

B-2



THE TAB ON THE CASSETTE B-2

(The photo is Sony type.)

When a new recording is made on a previously recorded cassette, the previous recording will be automatically erased. To avoid erasing a recording, slide the tab out to cover the opening.
When the tab is out, a recording cannot be made. To re-record on a cassette, slide the tab in.

Note
Never insert anything in the small holes on the rear of the cassette. These holes are used to sense the kind of tape, thickness of tape, if the tab is out or in, etc.

1-4. CAMERA RECORDING

RECORDING

The NP-22 battery pack is used as the power source.

1 **Set the REC MODE switch to the proper position according to the length of the programme to be recorded.** C-1

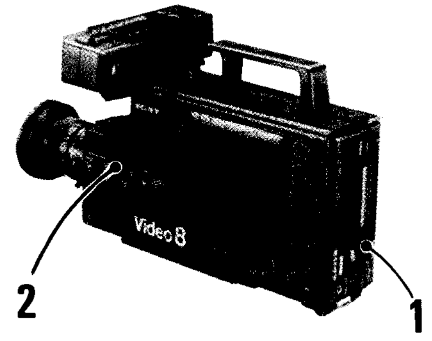
2 **Slide the CAMERA POWER switch to turn on the power (CAMERA mode) and insert the cassette into the cassette holder.** C-1
The CAMERA and the VTR lamps light up. The video camera recorder enters the recording pause mode and the recording and pause lamps light up.

3 **Adjust the viewfinder lens.** C-2
The distance of optimum vision varies from person to person.
Viewfinder lens adjustment is necessary when using the camera for the first time or after another person has used it.
❶ Lift up the viewfinder lens.
❷ Focus with the focus ring while observing the viewfinder screen.
❸ Replace the viewfinder lens and set the viewfinder lens adjustment lever so that the subject in the viewfinder is in focus.

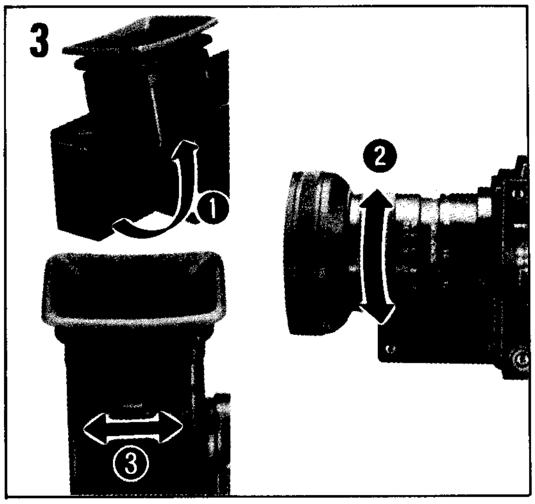
4 **Adjust the white balance (automatic adjustment).** C-3
With the white cap on the lens, point the camera at a light source (indoors) or a subject (outdoors) from a distance of at least two meters. Slide the WHITE BALANCE switch all the way down to ⊡ ; the white balance switch will immediately return to the ⌈ position. The white balance is now adjusted.

After white balance has been adjusted, the white balance lamp in the viewfinder goes out.

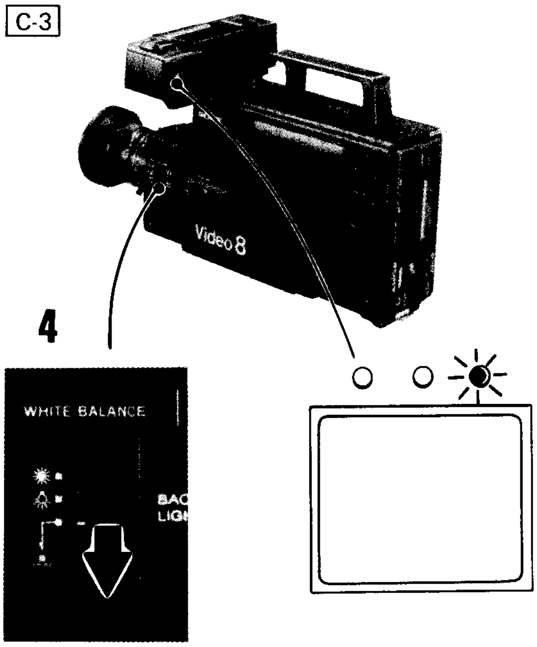
C-1



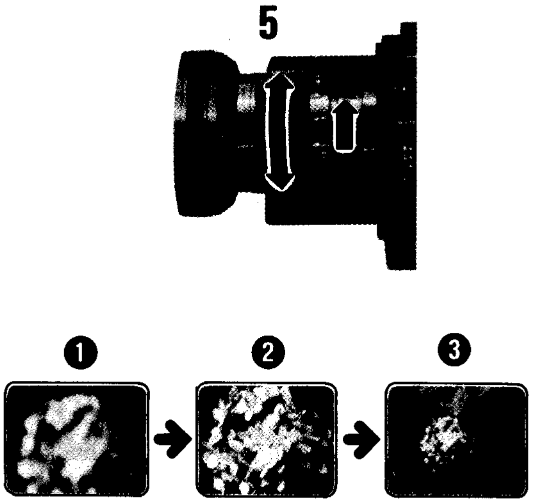
C-2



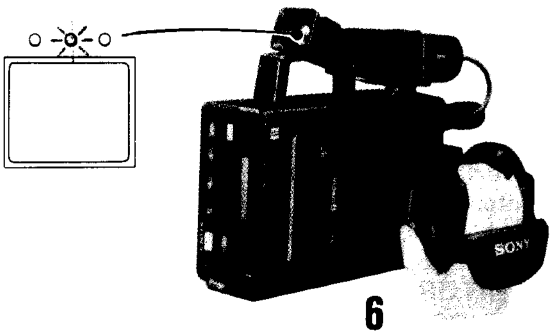
C-3



C-4



C-5



5 **Focus** C-4

❶ Remove the lens cap and set the manual zoom lever to 72 mm (telephoto).

❷ Turn the focus ring to focus.

❸ Turn the manual zoom lever to get the desired shot size.

For details on focusing, see the "FOCUS" on page 15.

6 **Press the START/STOP button to start recording.** C-5

The red lamp in the viewfinder lights up.

To stop recording, press the START/STOP button again.

The red lamp in the viewfinder goes out and the video camera recorder enters the recording pause mode.

- If you leave the recorder in the pause mode for seven minutes or more, the power of the recorder will be automatically turned off.
- A vertical band may appear when a subject such as a candle flame or a light is shot against a dark background.

After using the video camera recorder, slide the CAMERA POWER switch again. The CAMERA POWER lamp goes out.

Note

Never record an extremely bright object such as the sun just after recording under dark conditions; otherwise normal recording may become impossible. In this situation, point the recorder at any object except a very bright one.

SMOOTH RECORDING

Smooth recording can be made even if the recording is stopped and started again, or even if the power is turned off and on again, provided that the cassette is not removed.

Recording should be started from the recording pause mode. If the cassette has been removed, proceed as follows.

1 Play back the tape to get the point from which the recording is to begin again, referring to the "MONITORING THE PLAYBACK PICTURE ON THE VIEWFINDER SCREEN" on page 14 and stop the tape with the ■ button.

2 Set the recorder to the VTR-CAMERA mode by sliding the CAMERA POWER switch, or set it to the CAMERA mode by sliding the CAMERA POWER switch after turning the VTR POWER off.
3 Press the START/STOP button in the recording pause mode to start recording.

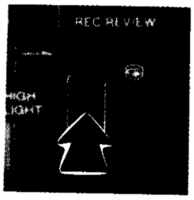
For details on the VTR-CAMERA mode and the CAMERA mode, see page 9.

INSTANT REPLAY ON THE SPOT (Record review)

When the recorder is set in the CAMERA mode or VTR-CAMERA mode, and then is set in the recording pause mode, the last few seconds of the recording can be played back on the viewfinder screen.

1 When the scene you want to record is finished, press the START/STOP button to stop the tape.
2 Press the ⟲ REC REVIEW button. D
The last few seconds of the recorded scene are played back in reverse, and then played back normally.
After playing back the tape up to the end of the recorded portion, the recorder enters the recording pause mode.
3 To restart recording, press the START/STOP button.

D



MONITORING THE PLAYBACK PICTURE ON THE VIEWFINDER SCREEN

If the recorder is in the CAMERA mode, turn off the CAMERA POWER switch and turn the VTR POWER switch on. Lift up the viewfinder lens to monitor the recorded picture on the viewfinder screen, and rewind and play back the tape. To monitor the playback sound, connect an earpiece to the EARPIECE jack.

1-5. FOCUS

The first time you use the camera, or if somebody else has been using the camera, be sure to set the viewfinder lens adjustment lever to your eyesight before recording.

BASIC TIPS FOR PERFECT FOCUSING

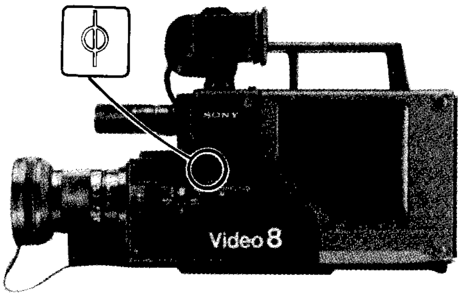
Following the instructions for basic camera operation on page 13, focus as follows: ❶ Make the subject as large as possible in the viewfinder by setting the manual zoom lever to the telephoto position; ❷ focus; ❸ zoom back so that the subject is the size you want it in the scene.

In the telephoto position, the lens' focusing field is very narrow, while in the wide angle position it is much less precise. Therefore, if the subject is focused in the lens' telephoto position, it will stay in perfect focus regardless of subsequent zooming operation. Focus needs to be reset only if the distance between the camera and the subject changes.

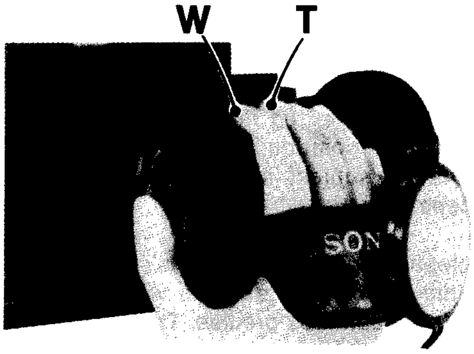
SOME HELPFUL HINTS

- When shooting a scene with lots of movement in bright light set the focal length to 3 m and the zoom to wide angle. The scene will remain in good focus regardless of the movement of the subject.
- If you don't have time to set the focus properly, set it to the closest approximate position and set the lens at wide angle to avoid out-of-focus shots. The figures on the focus ring indicate the distance between the subject and the ϕ mark on the side of the recorder body. E
- When shooting in low light situations, such as indoors, the depth of field for proper focus becomes very shallow. For best results, set the focus in telephoto, and shoot at wide angles.

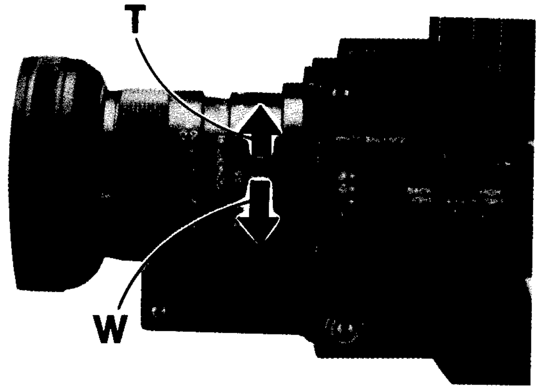
E



F-1



F-2



1-6. ZOOMING

Either manual zoom or power zoom can be used. To make zooming more effective, shoot a still scene for a few seconds at the beginning and the end of zooming.

POWER ZOOM F-1

Press T for telephoto and W for wide-angle.

MANUAL ZOOM F-2

For special effects, when extra fast or very slow zooms are required, manual zooming should be used.

1-7. IRIS ADJUSTMENT

The iris is adjusted automatically with the aperture switch set to ■ (centre). When shooting a scene with strong contrast such as the ones described as follows, adjust the aperture switch to BACK LIGHT or HIGH LIGHT.

- When a backlit shot results in the subject being too dark.....................set to BACK LIGHT.
- When a subject is too bright against a dark back ground.........................set to HIGH LIGHT.

Notes
Be sure the picture in the viewfinder has the proper brightness, when the aperture switch has been set to BACK LIGHT or HIGH LIGHT. Wrong selection of the position results in a picture that is too bright or too dark.

1-8. CLOSE-UPS (Macro)

Use of the macro function allows the camera to approach the subject almost to the lens, so that even tiny objects can literally fill the screen for dramatic close-up effects. This allows you to discover aspects of the subject that would otherwise be "impossible".

1 To remove the lens hood, turn it in a counterclockwise direction.
2 Pull the manual zoom lever out and turn the ring to the MACRO position.
3 Select the subject size in the scene by changing the distance between the subject and lens.
   The recorder can move to a subject as close as 4 mm (3/16 in.) from the lens surface.
4 Focus by turning the manual zoom lever.

Notes on macro shooting

- When shooting in macro, the depth of field is very shallow, so pay attention to focus. To keep the subject in focus, use a tripod or monopod.
- Zooming is not possible during macro recording. To change the size of the subject, move the lens closer or further away from it.

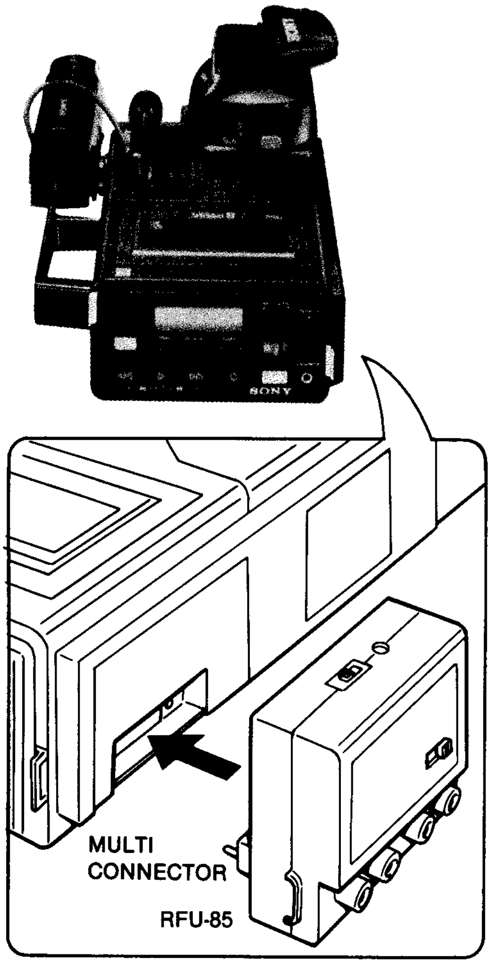
1-9. USE OF THE MICROPHONE

USING THE SUPPLIED MICROPHONE

The supplied microphone is a uni-directional monaural type. The sharp directivity of this microphone allows the subject being taped to be simultaneously recorded with natural sound quality. For best results when using the supplied microphone, keep the following points in mind.

- When the scene is very quiet, camera operation noises (using the zoom lever, etc.) may be picked up.
- Sounds of subjects far from the camera will not be picked up.

G-1



1-10. PLAYBACK OF THE RECORDED TAPE

The following connections are only for viewing tapes.
When you are away from home and still want to see the playback picture with an available TV, select one of the following ways.

With following connections, TV programmes can be viewed as usual.
If you also want to record a TV programme for the appropriate connections, see page 23.

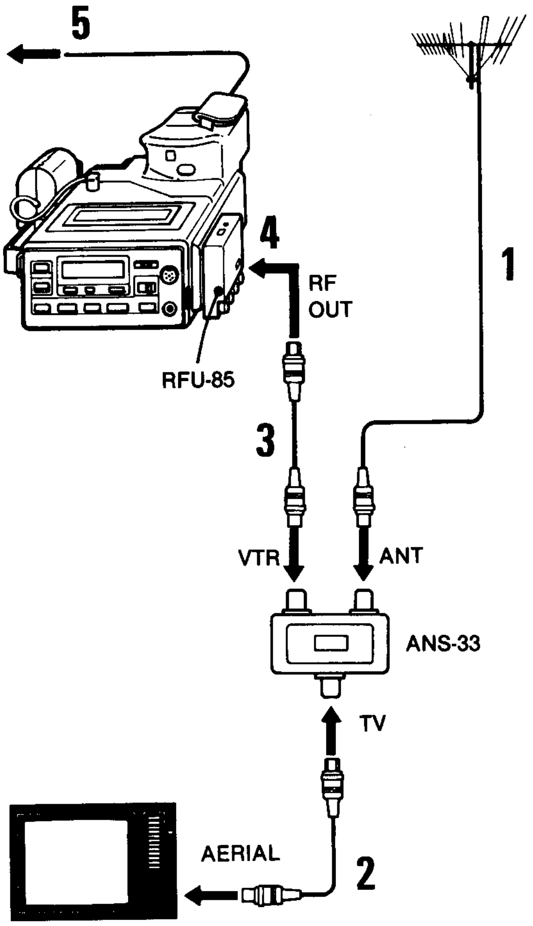
CONNECTION

Before making connections, be sure to unplug the main leads of all the equipment.

With the supplied ACP-85E as pack and RFU-85 RFU adaptor G-1

Connect the RFU adaptor to the MULTI CONNECTOR of the video camera recorder and insert the ac pack into the battery compartment.

G-2



Connecting a TV without audio/video input connectors

G-2

1. Disconnect the aerial cable from the aerial socket of the TV and connect it to the ANT connector of the ANS-33 antenna selector.
2. Connect the TV connector of the ANS-33 to the aerial socket of the TV with the aerial cable supplied to the RFU-85.
3. Connect the VTR connector of the ANS-33 to the RF OUT connector of the RFU-85 with the aerial cable supplied to the RFU-85.
4. Set the RF/LINE selector of the RFU-85 to RF and the I/G selector of it to the proper position according to the TV system of your area.
5. Connect all the mains leads to mains outlets.

Set the selector switch of the ANS-33 antenna selector to the proper position.
For viewing a playback picture, set to VTR.
For TV programme viewing, set to ANT.

Adjustments

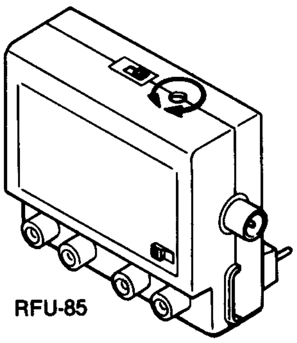
One of the television programme positions must be adjusted to receive the signal from the video camera recorder.

1. Turn on the TV and select a programme position which is not being used to receive a TV station.
2. Press the VTR POWER switch of the video camera recorder.
3. Slide the CAMERA POWER switch of the video camera recorder.
4. Set the selector switch of the ANS-33 to VTR.
5. Tune the channel of the TV until you see the picture and hear the sound to be shot by the recorder.

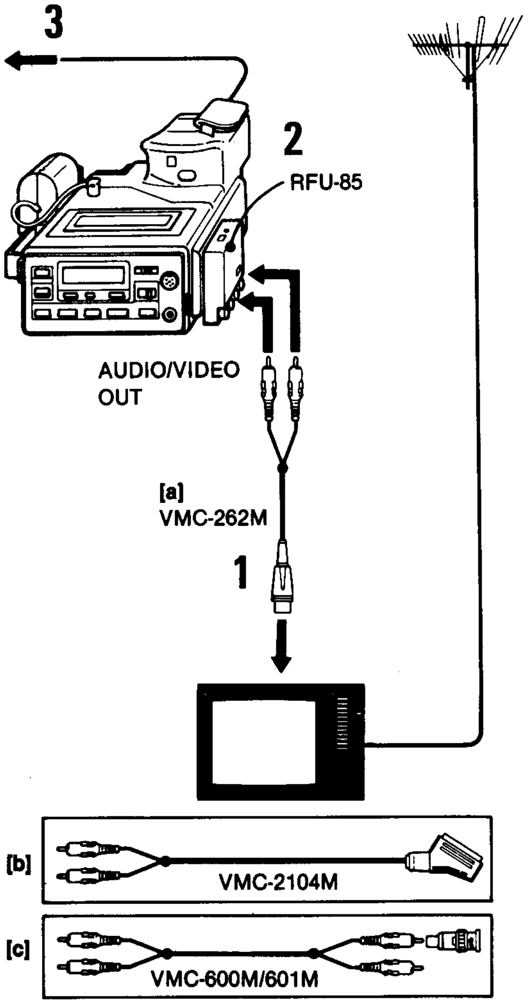
If you are not sure how to adjust your TV, please refer to the TV's instruction manual or consult your dealer.

Whenever you use the video camera recorder, you should set the TV to the programme position selected in this adjustment.

G-3



G-4



If the playback picture is not free of disturbance

1 Set the selector switch of the ANS-33 to ANT.
2 Adjust the programme position of the TV to a channel between UHF channels 30 and 39 with the tuning control or the fine tuning cotrol on the TV, so that the TV screen shows no picture and so that a steady rustling sound or no sound is heard.
3 Set the selector switch of the ANS-33 to VTR.
4 Slowly turn the rf channel screw of the RFU-85 with the supplied screwdriver, until you see an undistorted picture of what is being shot. G-3
Now the TV adjustment is complete.

Connecting a TV receiver/colour monitor which is equipped with the following connector(s)

G-4

6-pin DIN connector

Leave the aerial cable connected to the aerial socket of the TV.

1 Connect the AUDIO/VIDEO OUT jacks of the RFU-85 to the 6-pin DIN connector of the TV with an optional VMC-262M audio video cable.
2 Set the RF/LINE selector of the RFU-85 to LINE.
3 Connect all the mains leads to mains outlets.

With this connection, you don't have to select the channel for the video camera recorder. Instead, set the TV/VIDEO select button of the TV to the proper setting.

For viewing a playback picture, set to the VIDEO mode.

For TV programme viewing, set to the TV mode.

When a colour TV tuner is not connected to a colour monitor, TV programmes can't be viewed.

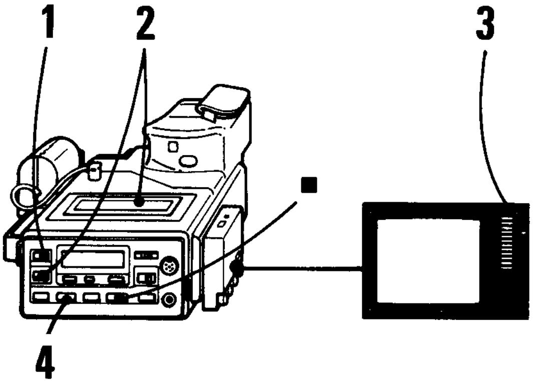
When a 21-pin connector (EUROCONNECTOR) is available on the TV [b]

Use an optional VMC-2104M audio video cable instead of the VMC-262M audio video cable in step 1.

When audio/video connectors are available on the TV [c]

Use an optional VMC-600M/601M audio video cable instead of the VMC-262M audio video cable in step 1.

G-5



OPERATION G-5

The viewfinder cable need not be connected.

1 Turn on the power of the equipment to be used.
2 Insert a cassette.
3 Turn on the TV or colour monitor.
  When a TV without audio/video input connectors is connected, select the programme position which is adjusted for the video camera recorder.
  When a TV with 6-pin DIN, 21-pin or audio/video connectors is connected, set the TV/VIDEO select button to the VIDEO mode.
4 Press the ▶ button of the video camera recorder.
  The lamp lights and the playback starts.

To stop the playback, press the ■ button.

When the tape comes to an end, the unit automatically stops.

DIFFERENT FORMS OF PLAYBACK

To obtain a still picture

Press the ▮▮ button during playback.
Streaks will appear in the still picture. The sound will be muted. To resume normal playback, press the ▮▮ button again.
When the pause mode lasts for more than approximately 7 minutes, the pause mode will be automatically released and the unit will be set in the stop mode.

Note

When a tape is recorded in the SP mode, a still picture may be noisy with many streaks and become black-and-white.

To view the picture at high speed

Keep pressing the ▶▶ or ◀◀ button during playback. For high-speed playback picture in the forward direction, press the ▶▶ button. For high-speed playback picture in the reverse direction, press the ◀◀ button.
Streaks will appear in the high-speed pictures. The sound will be muted.
Release the button for normal playback.

Note

When a tape is recorded in the SP mode, a high-speed picture may be played back sometimes in black-and-white and streaks will be wider than those of the LP recorded tape.

1-11. USE OF THE TAPE COUNTER

TO INDEX THE WHOLE TAPE

When the unit is turned on, the tape counter will appear in the display window. Press the RESET button at the beginning of the tape so that the counter shows "0000". By noting the counter reading at a particular point, you can easily find that point later by referring to the tape counter.
Write the counter readings you want to remember on the label of the cassette.

TO RETURN TO A PRE-REGISTERD POINT

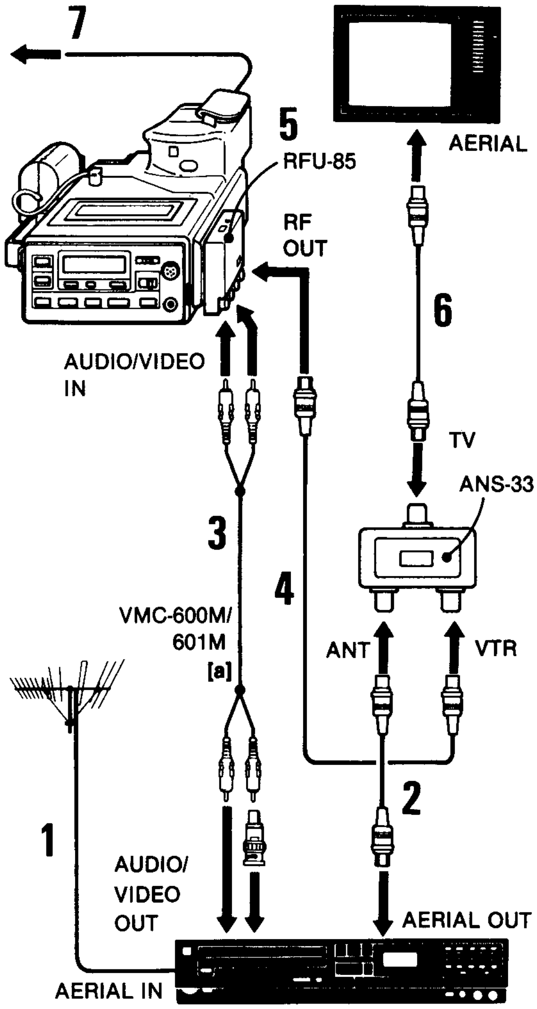
During recording or playback, press the RESET button at the point you later want to locate. The counter will be set at "0000".

1 Press the ■ button to stop the tape, when the recording or playback has finished.
2 Press the MEMORY button and the "MEMORY" mark will appear in the display window.
3 Press the ▶▶ or ◀◀ button.
The tape will be sent forward or in reverse and stop automatically when the counter reaches "0000".

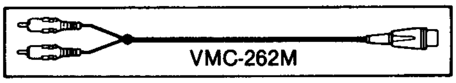
Notes

- While the "MEMORY" mark appears in the display window, the counter cannot be reset to "0000", therefore, press the MEMORY button to cancel the function and then press the RESET button.
- The counter reading and the point of the tape may not correspond exactly.

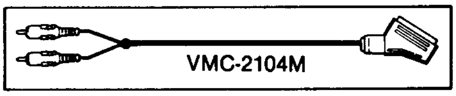
H-1



[b]



[c]



1-12. TV PROGRAMME RECORDING

The following connections make both TV programme viewing/recording and tape playing possible.

The viewfinder cable need not be connected.

PREPARATION

Before making connections, be sure to unplug the mains leads of all the equipment.

With the supplied ACP-85E ac pack and RFU-85 RFU adaptor

Connect the RFU adaptor to the MULTI CONNECTOR of the video camera recorder and insert the ac pack into the battery holder. (See page 18.)

Connecting a TV without audio/video input connectors and a VTR without an input select switch

H-1

CONNECTION

1 Connect the aerial cable to the aerial in socket of the VTR.
2 Connect the aerial out socket of the VTR to the ANT connector of the ANS-33 with the aerial cable supplied with the RFU-85.
3 Connect the audio/video output connectors of the VTR to the AUDIO/VIDEO IN jacks of the RFU-85 with the optional VMC-600M/601M audio video cable [a].
4 Connect the VTR connector of the ANS-33 to the RF OUT connector of the RFU-85 with the aerial cable supplied with the RFU-85.
5 Set the RF/LINE selector of the RFU-85 to RF and the I/G selector of it to the proper position according to the TV system of your area.
6 Connect the TV connector of the ANS-33 to the aerial socket of the TV with an optional aerial cable.
7 Connect all the mains leads to mains outlets.

When a 6-pin DIN connector is available on the VTR [b]

Use an optional VMC-262M audio video cable instead of the VMC-600M/601M audio video cable.

When a 21-pin connector (EUROCONNECTOR) is available on the VTR [c]

Use an optional VMC-2104M audio video cable instead of the VMC-600M/601M audio video cable.

OPERATION

Recording

1 Turn on the power of the equipment to be used.
2 Set the selector switch of the ANS-33 to VTR.
3 Insert the cassette into the video camera recorder.
4 Select the channel to be recorded with the programme select button on the VTR and select the programme position for the video camera recorder on the TV.
5 Start recording.

Playback

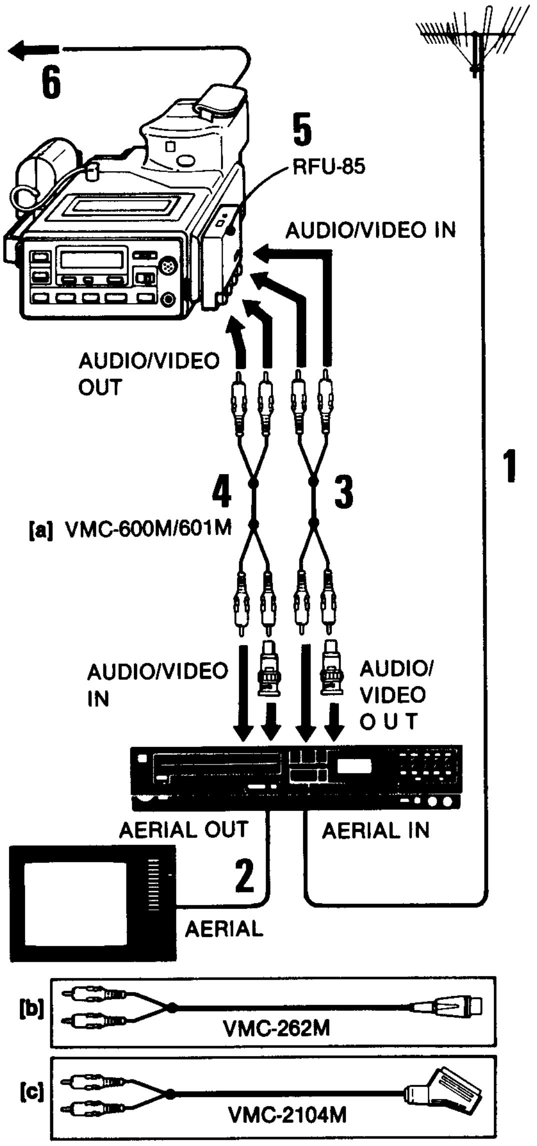
1 Turn on the power of the video camera recorder and the TV.
2 Set the selector switch of the ANS-33 to VTR.
3 Select the programme position for the video camera on the TV.
4 Start playback.

Recording one TV programme while viewing another

1 Set the selector switch of the ANS-33 to ANT.
2 Select the desired programme position on the TV.

Connecting a TV without audio/video input connectors and a VTR with an input select switch

H-2



CONNECTION

1 Connect the aerial cable to the aerial in socket of the VTR.
2 Connect the aerial out socket of the VTR to the aerial socket of the TV with the aerial cable supplied with the RFU-85.
3 Connect the audio/video output connectors of the VTR to the AUDIO/VIDEO IN jacks of the RFU-85 with the optional VMC-600M/601M audio video cable.
4 Connect the AUDIO/VIDEO OUT jacks of RFU-85 to the audio/video input connectors of the VTR with an optional VMC-600M/601M audio video cable [a].
5 Set the RF/LINE selector of the RFU-85 to LINE.
6 Connect all the mains leads to mains outlets.

When a 6-pin DIN connector is available on the VTR [b]
Use an optional VMC-262M audio video cable instead of the VMC-600M/601M audio video cable.

When a 21-pin connector (EUROCONNECTOR) is available on the VTR [c]
Use an optional VMC-2104M audio video cable instead of the VMC-600M/601M audio video cable.

OPERATION

Recording
1 Turn on the power of the equipment to be used.
2 Insert the cassette into the video camera recorder.
3 Select input button of the VTR to TUNER.
4 Select the programme position to be recorded with the programme select button on the VTR and select the programme position for the VTR on the TV.
5 Start recording.

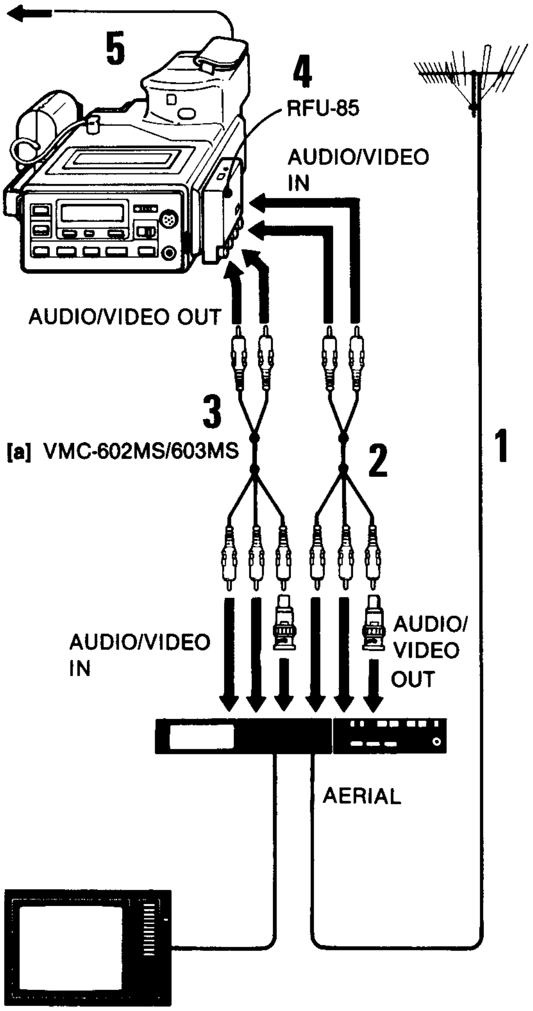
Playback
1 Turn on the power of the equipment to be used.
2 Set the input select button of the VTR to LINE.
3 Select the programme position for the VTR on the TV.
4 Start playback.

Recording one TV programme while viewing another
Select the desired programme position on the TV.

When a stereo VTR is used, use an optional VMC-602MS/603MS audio video cable instead of a VMC-600M/601M audio video cable or use an optional VMC-2106S audio video cable instead of a VMC-2104M audio video cable.

Connecting a TV with audio/video input connectors, or a colour monitor and a TV tuner

H-3



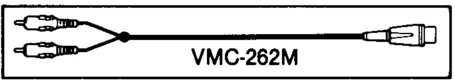
CONNECTION

The colour monitor should be connected to the TV tuner first.

1 Connect the aerial cable to the aerial socket of the TV tuner.
2 Connect the audio/video output connectors of the TV or the TV tuner to the AUDIO/VIDEO IN jacks of RFU-85 with an optional VMC-602MS/603MS audio video cable.
3 Connect the AUDIO/VIDEO OUT jacks of the RFU-85 to the audio/video input connectors of the TV or the TV tuner with an optional VMC-602MS/603MS audio video cable [a].
4 Set the RF/LINE selector of the RFU-85 to LINE.
5 Connect all the mains leads to mains outlets.

When a 6-pin DIN connector is available on the TV tuner [b]
Use an optional VMC-262M audio video cable instead of the VMC-602M/603MS audio video cable.

[b]



OPERATION

Recording

1 Turn on the power of the equipment to be used.
2 Insert the cassette into the video camera recorder.
3 Set the input select button of the TV or the TV tuner to TV, and select the programme position to be recorded.
4 Start recording.

Playback

1 Turn on the power of the equipment.
2 Set the input select button of the TV or the TV tuner to VIDEO.
3 Insert the cassette into the video camera recorder and start playback.

TO STOP THE TAPE MOMENTARILY

Press the II button. The TV programme can be seen on the TV but the picture will not be recorded.
To resume recording, press the II button again.
When the recording pause mode lasts for approximately 7 minutes, the pause mode will be automatically release and the unit will be set in the stop mode.

With above connections, TV programmes can be viewed as usual.

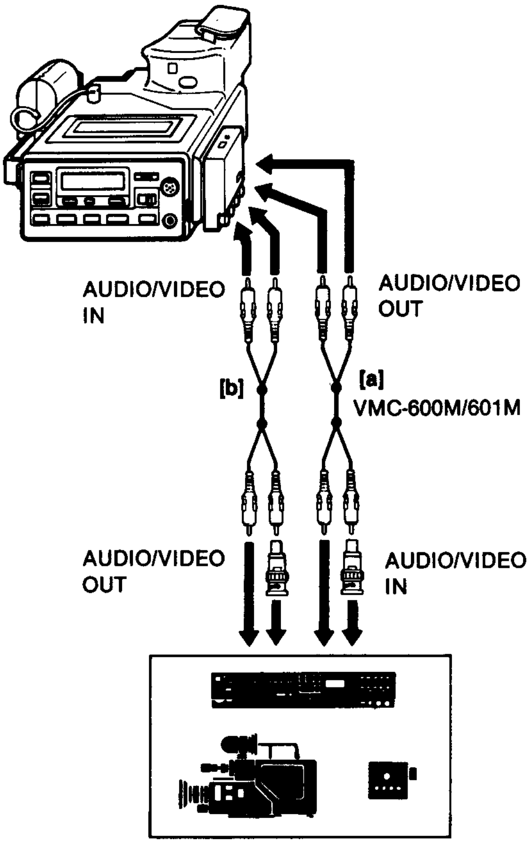
Notes
- When the unit is set in the VTR-CAMERA mode, a TV programme cannot be recorded as the camera takes precedence. For TV programme recording, turn on the VTR power only.
- When the tape comes to an end, the "TAPE" mark will blink in the display window. When the tape has ended, the unit will be automatically set in the stop mode.

1-13. EDITING I

To edit a home movie tape you will need another video recorder or another video camera recorder.
Connect the RFU-85 RFU adaptor to the video camera recorder before making the other connections.

1. **To transfer the original tape from the CCD-V8E to the tape on the other VTR or video camera recorder,** connect the AUDIO/VIDEO OUT jacks of the RFU-85 to the AUDIO/VIDEO IN jacks of the recorder and set the RF/LINE selector of the RFU-85 to LINE. [a]
   To transfer the original tape from the other VTR or video camera recorder to the tape on the CCD-V8E video camera recorder, connect the AUDIO/VIDEO IN jacks of the RFU-85 to the AUDIO/VIDEO OUT jacks of the recorder. [b]
2. Turn on the power of the equipment.
3. Start editing.

I



1-14. INSERT RECORDING

You can insert (record) video and audio simultaneously from the camera, a TV or a VTR onto any recorded tape.

PREPARATION

Make the necessary connections. For details on each connection and operation, refer to the corresponding page.

To insert camera recording [P. 12]
Set the video camera recorder in the VTR-CAMERA mode. Insert recording cannot be made in the CAMERA mode.
1 Press the VTR POWER switch.
2 Slide the CAMERA POWER switch.

To insert a TV programme [P. 23]
Make the necessary connections as described in TV programme recording.

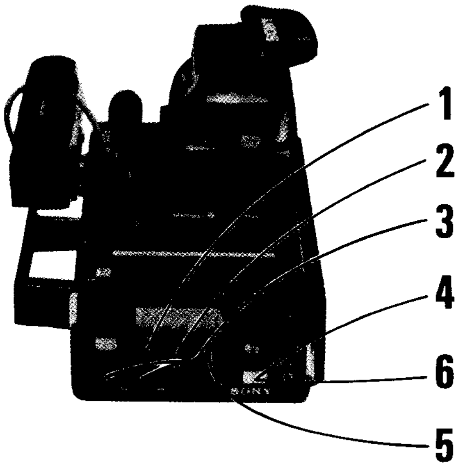
To insert a recording from a VTR [P. 27]
Make the necessary connections as described in editing.

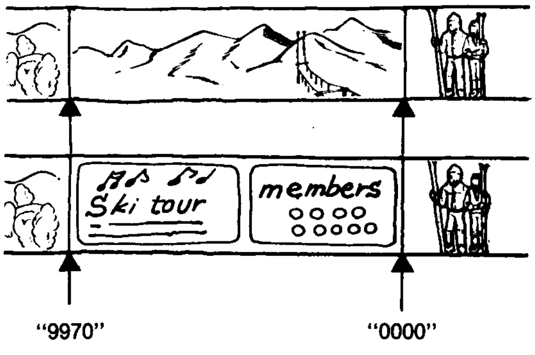
OPERATION J

Monitor the playback picture of the recorded tape on the viewfinder screen and decide where the insertion should be made.

1 Find the position for the end of the insert and press the RESET button. The counter returns to "0000".
2 Press the MEMORY button. The "MEMORY" mark appears on the display window.
3 Rewind the tape back past where the insert should begin (e.g. "9970") by pressing the ◀◀ button during playback.
4 Release the ◀◀ button and press the ❚❚ button at the place the insert should begin. The unit is set in the playback pause mode.
5 Press the INSERT button. The unit is set in the insert pause mode. The ▶ lamp goes out and the INSERT and the ❚❚ lamp will light.
6 Play the inserting source of the connected equipment and:
For camera recording, press the START/STOP or the ❚❚ button.
For other recording, press the ❚❚ button.
The insert recording will start and the counter reading will increase.
The insert recording stops at the counter reading "0000" and the INSERT lamp goes out.

J





Instead of deciding the point where the insert should end, as described in step 1, you may wish to continue the insertion and stop it at a suitable point while monitoring the inserted recording. In this case, start operating from step 3. Proceed with the remaining steps and stop the insertion by pressing the ■ button.

When the pause mode lasts for approximately 7 minutes, the pause mode will be automatically released and the unit will be set in the stop mode.

1-15. NOTES ON MOISTURE CONDENSATION

MOISTURE INSIDE THE RECORDER SECTION

If the unit is brought directly from a cold to a warm location, moisture may condense on the drum assembly inside the unit. In this condition, the tape may adhere to the head drum. Take the cassette away.
To prevent possible damage under these circumstances, the recorder section is furnished with a moisture sensor. If moisture is present, the 💧 mark will blink when the power is turned on and the function buttons except for the EJECT button will not work. When a cassette has been inserted, the 💧 mark and the EJECT lamp will blink and the tape will be automatically unloaded.

If the 💧 mark blinks, eject the cassette and proceed as required.

When a battery pack is used as the power source
Turn off the unit and let the unit sit with the cassette compartment open until the moisture evaporates and the 💧 mark goes out when the power is turned on. In case the 💧 mark does not go out in a few hours, use an ac power adaptor or a dc pack as the power source.

When an ac power adaptor or a dc pack is used as the power source
Leave the recorder section turned on, so that the heater built in the recorder will activate to make the moisture evaporate.

When the moisture has completely evaporated, the 💧 mark will go out. Then operate the unit as usual.

Moisture on the tape
If a tape is brought directly from a cold to a warm location, moisture may condense on the surface of the tape. When the tape is inserted and a tape transport button (such as the ▶ button) is pressed, the EJECT lamp will blink and the function buttons except for the EJECT button will not work. In this case, the 💧 mark will not appear.

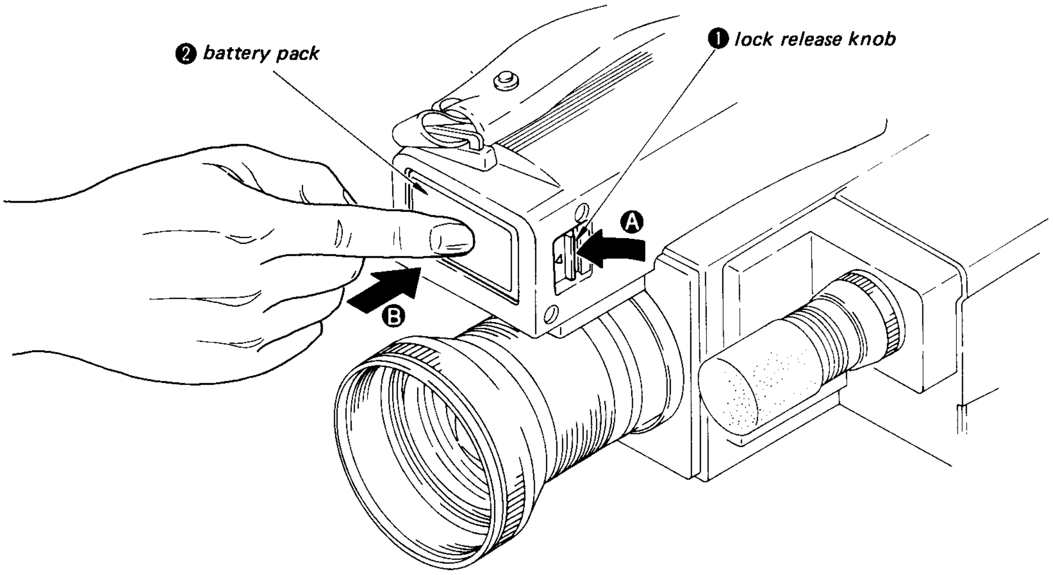
If the EJECT lamp blinks, eject the cassette and let the unit and the cassette sit until the moisture evaporates.

When to use
The unit can be used again if the EJECT lamp does not light when a cassette is inserted and a tape transport button is pressed.

SECTION 2
DISASSEMBLY

2-1. REMOVAL OF THE BATTERY PACK

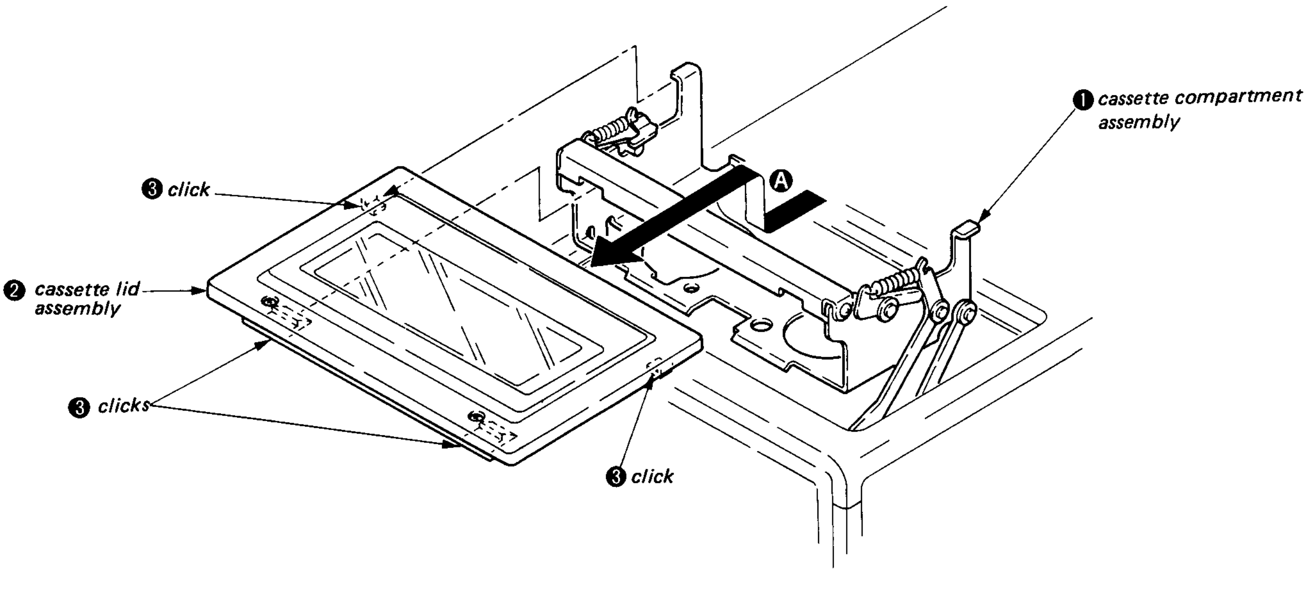
1) Press the lock release knob ❶ in the direction shown by the arrow Ⓐ and push the battery pack ❷ in the direction shown by the arrow Ⓑ until a clicking tone is audible.
2) Remove the battery pack ❷ pushed out by a spring force.


❷ battery pack
❶ lock release knob
Ⓐ
Ⓑ

2-2. REMOVAL OF THE CASSETTE LID ASSEMBLY

1) Turn on power and press the EJECT button to lift the cassette compartment assembly ❶ .
2) Slide the cassette lid assembly ❷ in the direction shown by the arrow Ⓐ and remove it.

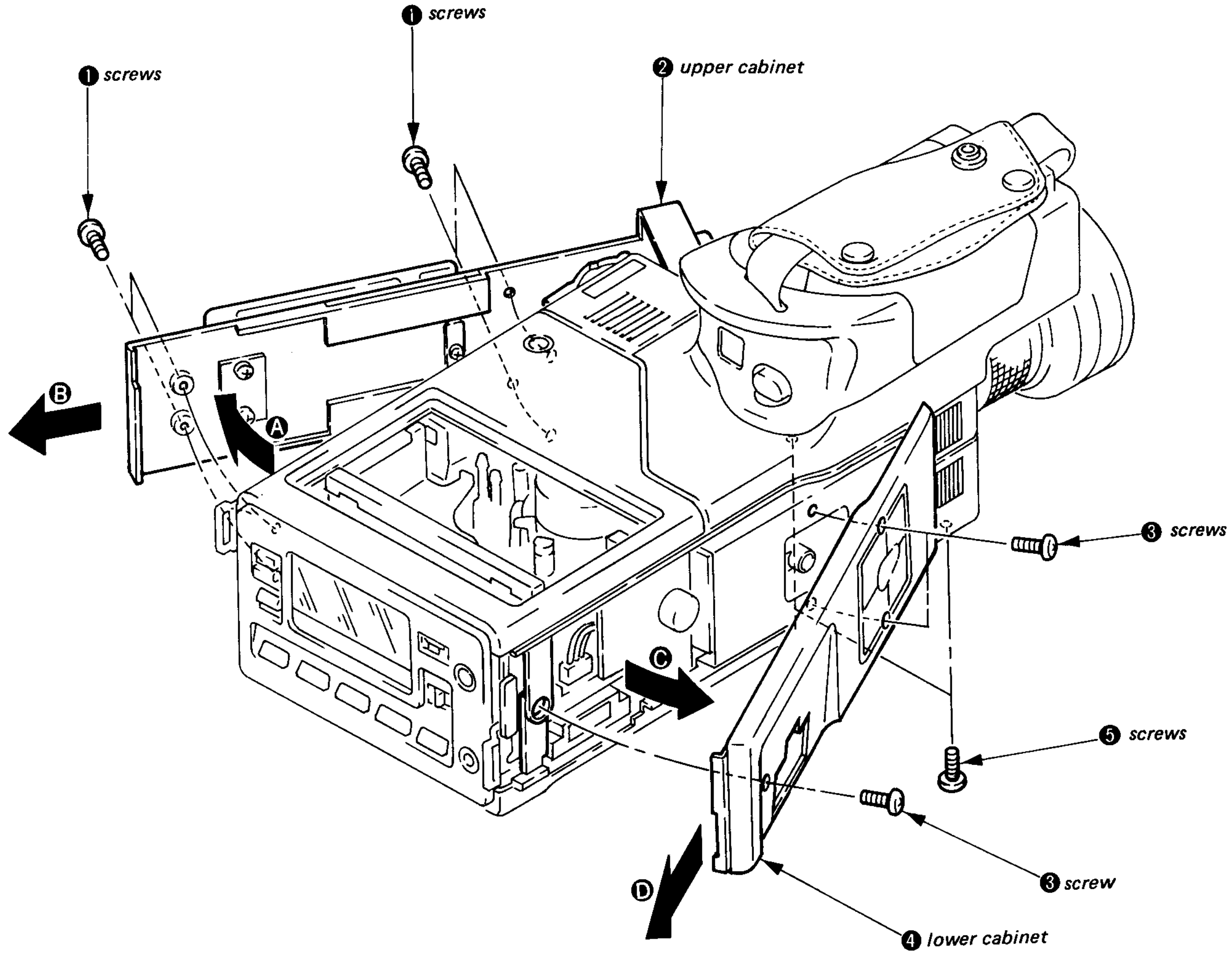
* Set so that the clicks ❸ fit in their positions.


❸ click
❷ cassette lid assembly
❸ clicks
❸ click
Ⓐ
❶ cassette compartment assembly

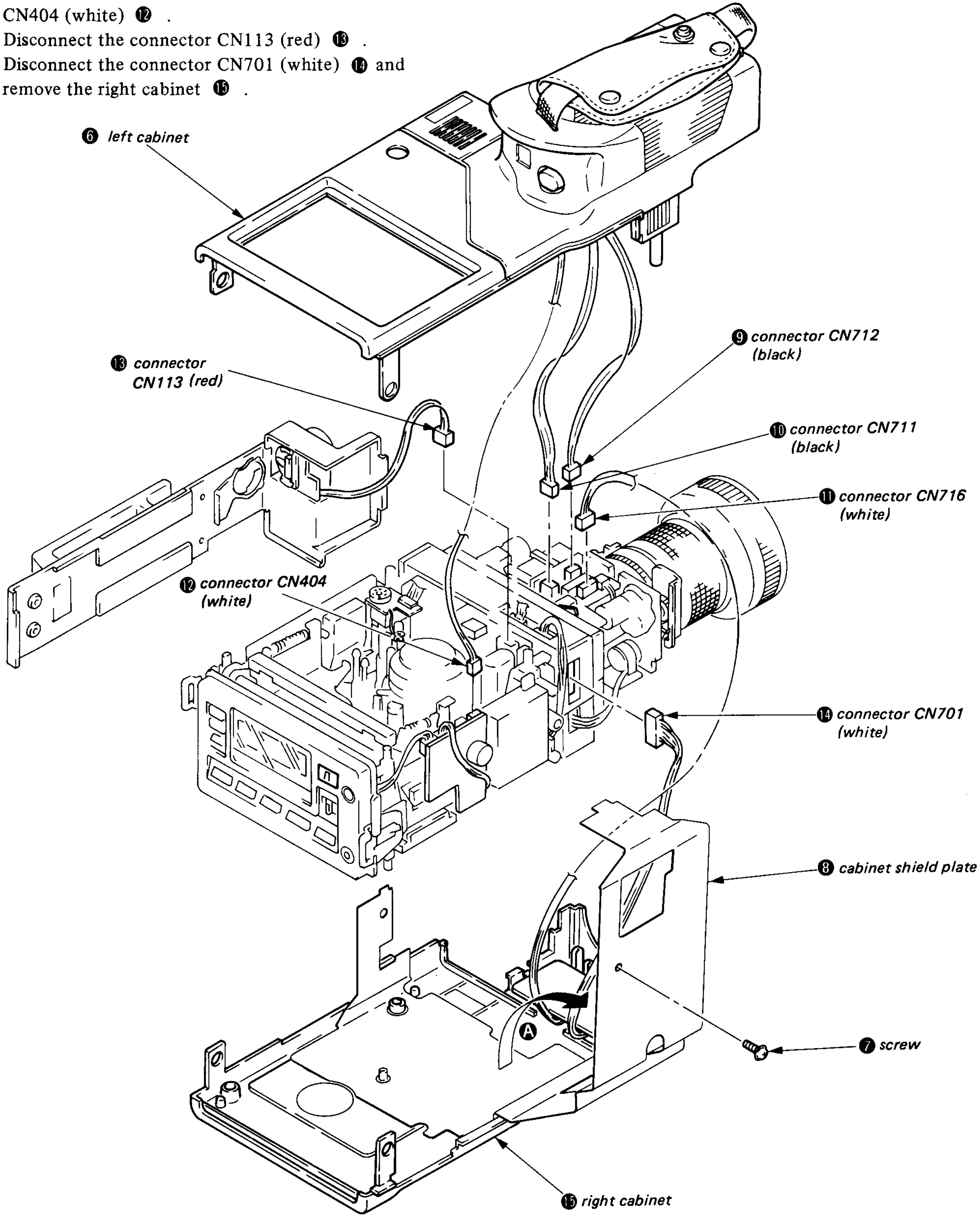
2-3. REMOVAL OF THE CABINET

1) Remove the four screws ❶ .
2) Open the upper cabinet ❷ in the direction shown by the arrow Ⓐ and remove it in the direction shown by the arrow Ⓑ . Be careful not to break the wiring cord which connects the upper cabinet ❷ of the main unit.
3) Remove the three screws ❸ .
4) Open the lower cabinet ❹ in the direction shown by the arrow Ⓒ and remove it in the direction shown by the arrow Ⓓ .
5) Remove the two screws ❺ .

To next page.

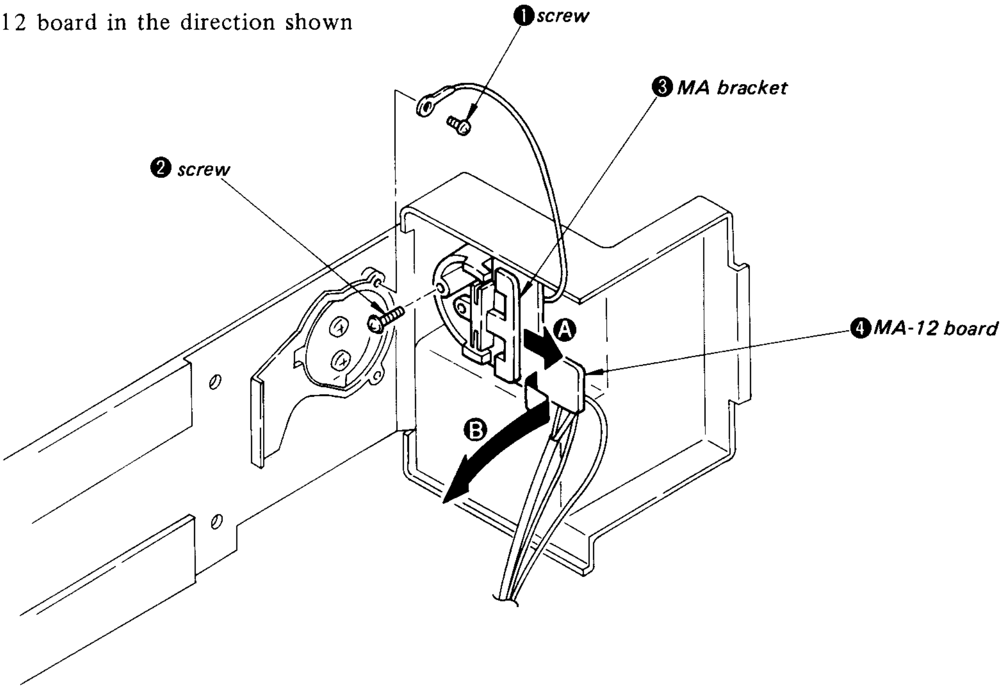

❶ screws
❶ screws
❷ upper cabinet
Ⓑ
Ⓐ
❸ screws
Ⓒ
❺ screws
❸ screw
Ⓓ
❹ lower cabinet

6) Remove the left cabinet ❻ .
7) Remove the screw ❼ and open the cabinet shield plate ❽ in the direction shown by the arrow Ⓐ .
8) Disconnect the connectors CN712 (black) ❾ , CN711 (black) ❿ , CN716 (white) ⓫ , and CN404 (white) ⓬ .
9) Disconnect the connector CN113 (red) ⓭ .
10) Disconnect the connector CN701 (white) ⓮ and remove the right cabinet ⓯ .


❻ left cabinet
⓭ connector CN113 (red)
❾ connector CN712 (black)
❿ connector CN711 (black)
⓫ connector CN716 (white)
⓬ connector CN404 (white)
⓮ connector CN701 (white)
❽ cabinet shield plate
Ⓐ
❼ screw
⓯ right cabinet

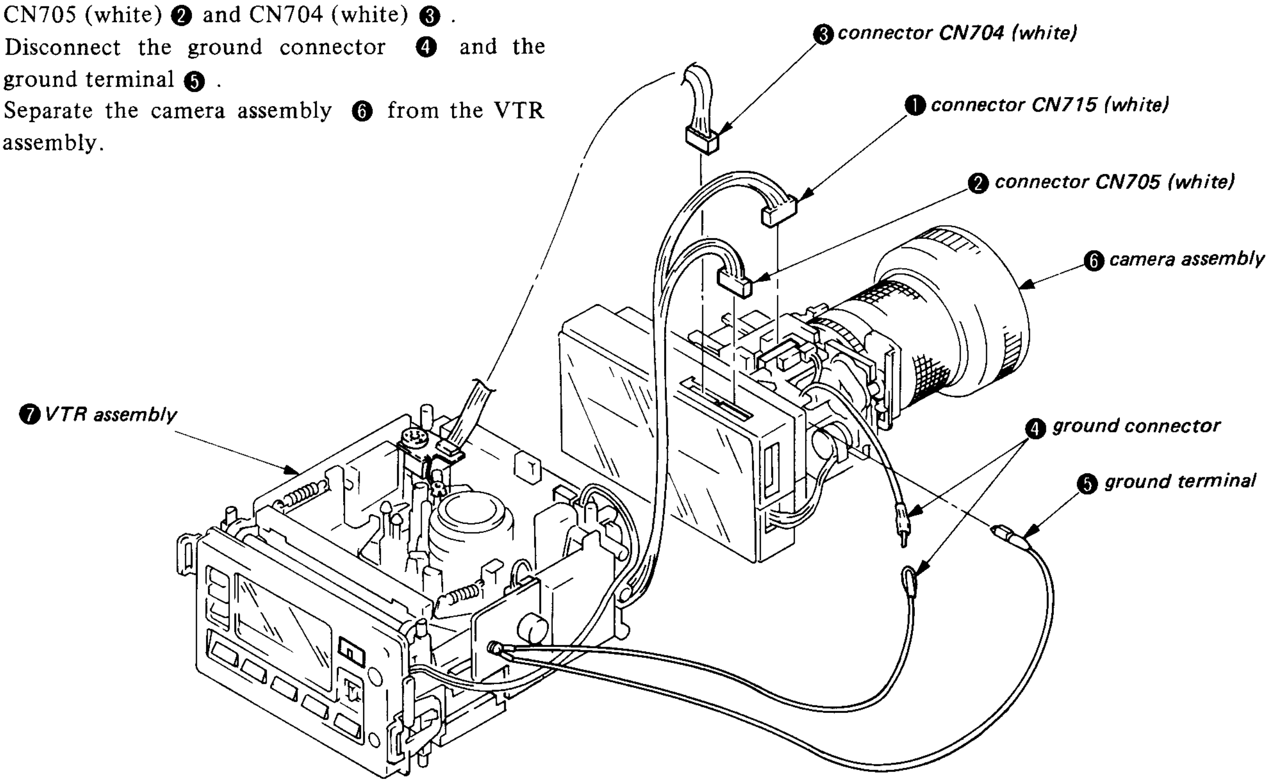
2-4. REMOVAL OF THE MA-12 BOARD

1) Remove the screw ❶.
2) Remove the screw ❷.
3) Remove the MA bracket ❸ in the direction shown by the arrow Ⓐ.
4) Remove the MA-12 board in the direction shown by the arrow Ⓑ.


❶ screw
❸ MA bracket
❷ screw
Ⓐ
❹ MA-12 board
Ⓑ

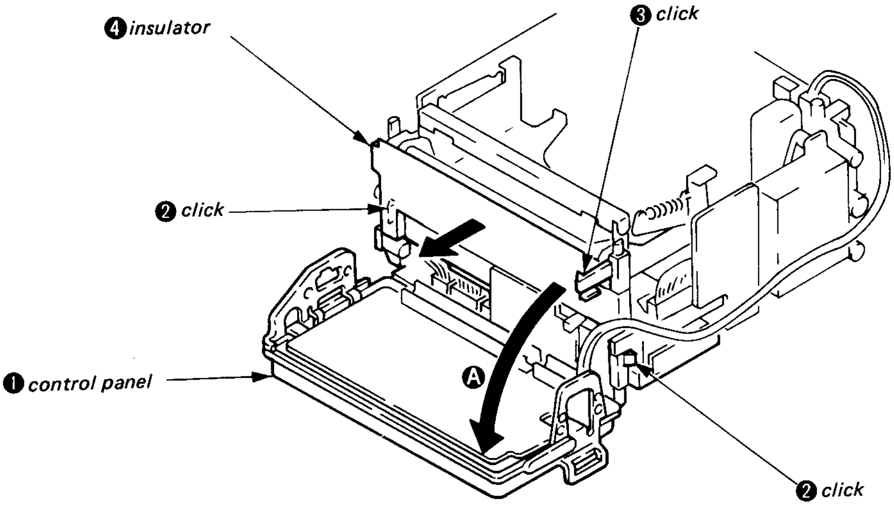
2-5. SEPARATION OF THE VTR ASSEMBLY AND CAMERA ASSEMBLY

1) Disconnect the connectors CN715 (white) ❶, CN705 (white) ❷ and CN704 (white) ❸.
2) Disconnect the ground connector ❹ and the ground terminal ❺.
3) Separate the camera assembly ❻ from the VTR assembly.

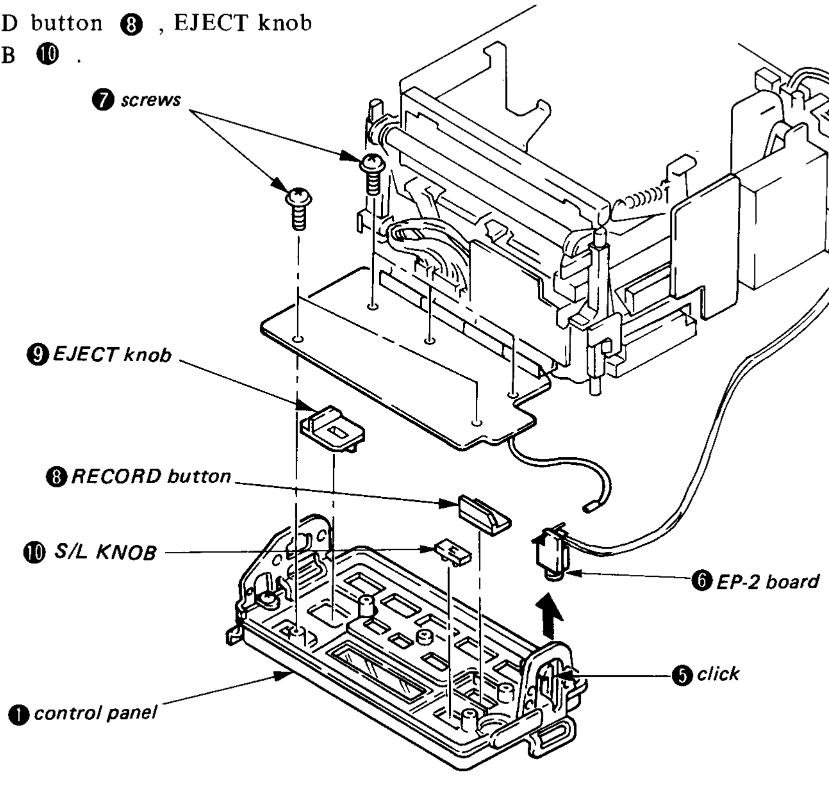

❸ connector CN704 (white)
❶ connector CN715 (white)
❷ connector CN705 (white)
❻ camera assembly
❼ VTR assembly
❹ ground connector
❺ ground terminal

2-6. REMOVAL OF THE CONTROL PANEL

1) Disengage the strap mounting metal fittings on both right and left sides of the control panel ❶ from the two clicks ❷ .
2) Disengage the click ❸ and open the control panel ❶ with the printed circuit board in the direction shwon by the arrow Ⓐ .
   (You will hear a tearing sound, but this causes no problem.)
3) Remove the insulator ❹ .

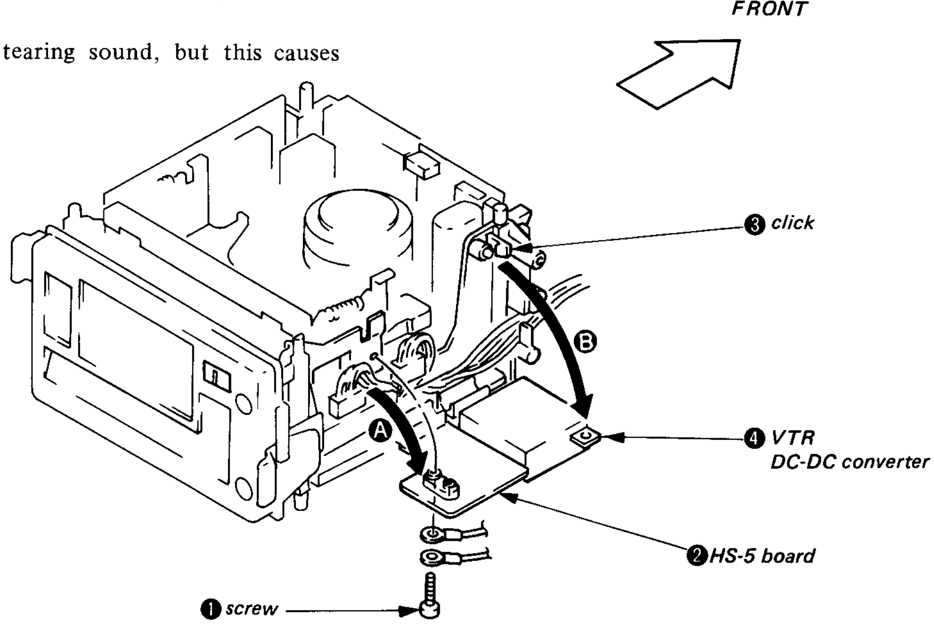

❹ insulator
❸ click
❷ click
❶ control panel
Ⓐ
❷ click

4) Disengage the click ❺ and remove the EP-2 board ❻ .
5) Remove the five screws ❼ and the control panel ❶ .
6) Remove the RECORD button ❽ , EJECT knob ❾ and the S/L KNOB ❿ .


❼ screws
❾ EJECT knob
❽ RECORD button
❿ S/L KNOB
❻ EP-2 board
❺ click
❶ control panel

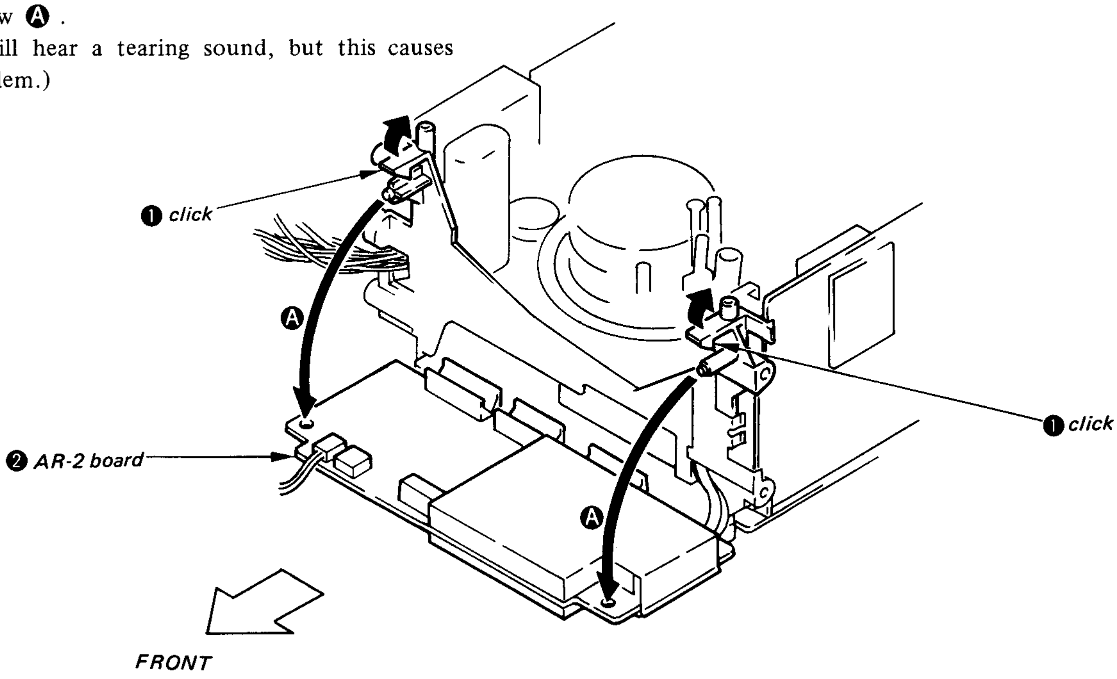
2-7. OPENING OF THE HS-5 BOARD AND THE DC-DC CONVERTER (VTR)

1) Remove the screw ❶ .
2) Open the HS-5 board ❷ in the direction shown by the arrow Ⓐ .
   (You will hear a tearing sound, but this causes no problem.)
3) Disengage the click ❸ and open the DC-DC converter ❹ in the direction shown by the arrow Ⓑ .
   (You will hear a tearing sound, but this causes no problem.)


FRONT
❸ click
Ⓑ
Ⓐ
❹ VTR DC-DC converter
❷HS-5 board
❶ screw

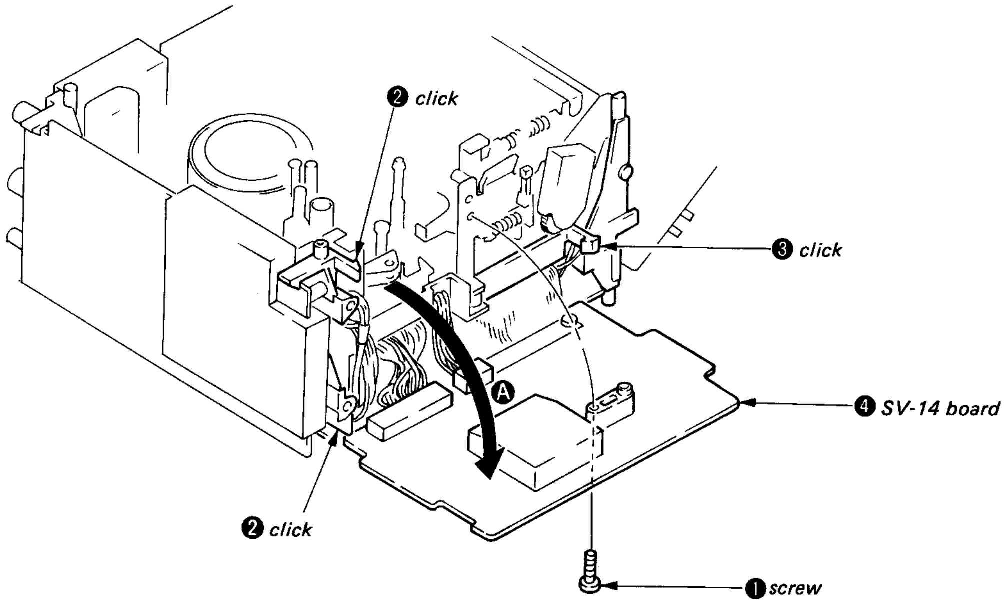
2-8. OPENING OF THE AR-2 BOARD

1) Disengage the two clicks ❶ from the AR-2 board ❷ .
2) Open the AR-2 board in the direction shown by the arrow Ⓐ .
   (You will hear a tearing sound, but this causes no problem.)


❶ click
Ⓐ
❷ AR-2 board
Ⓐ
❶ click
FRONT

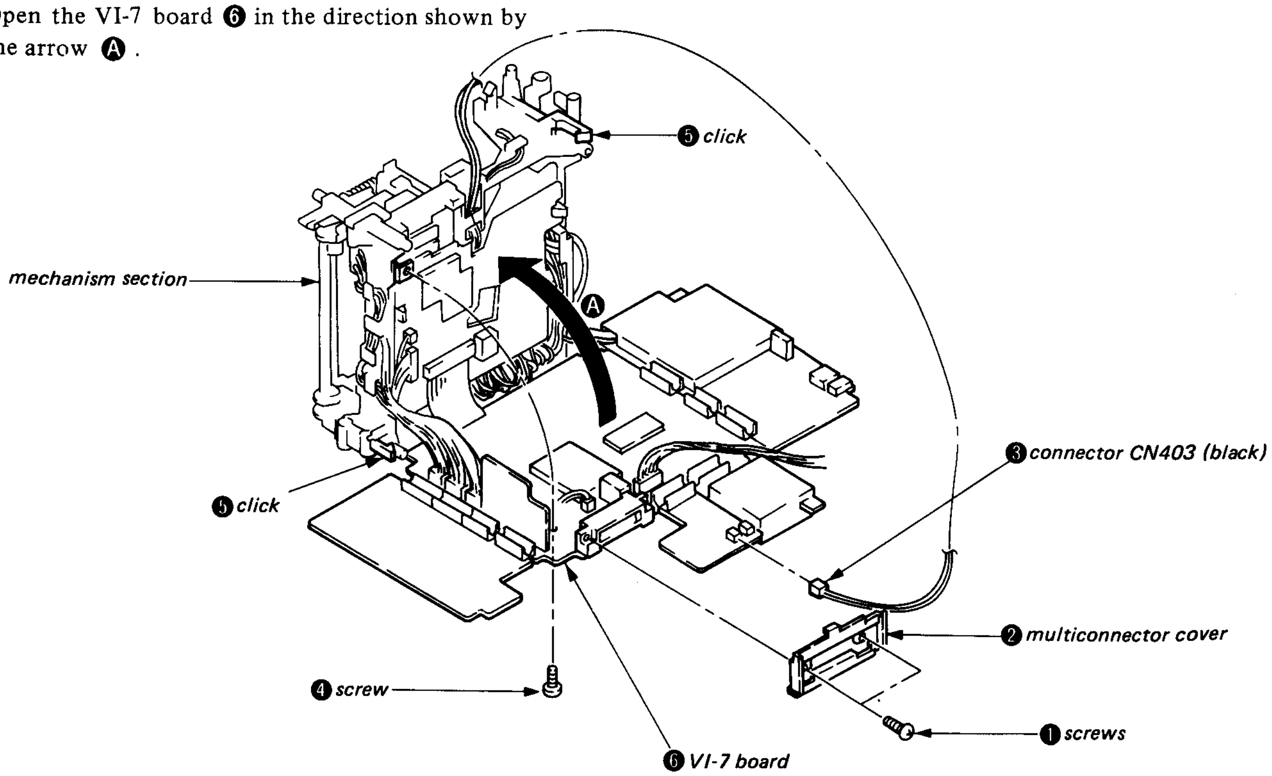
2-9. OPENING OF THE SV-14 BOARD

1) Remove the screw ❶.
2) Disengage the two clicks ❷.
3) Disengage the click ❸ and open the SV-14 board ❹ in the direction shown by the arrow Ⓐ.


❷ click
❸ click
Ⓐ
❹ SV-14 board
❷ click
❶ screw

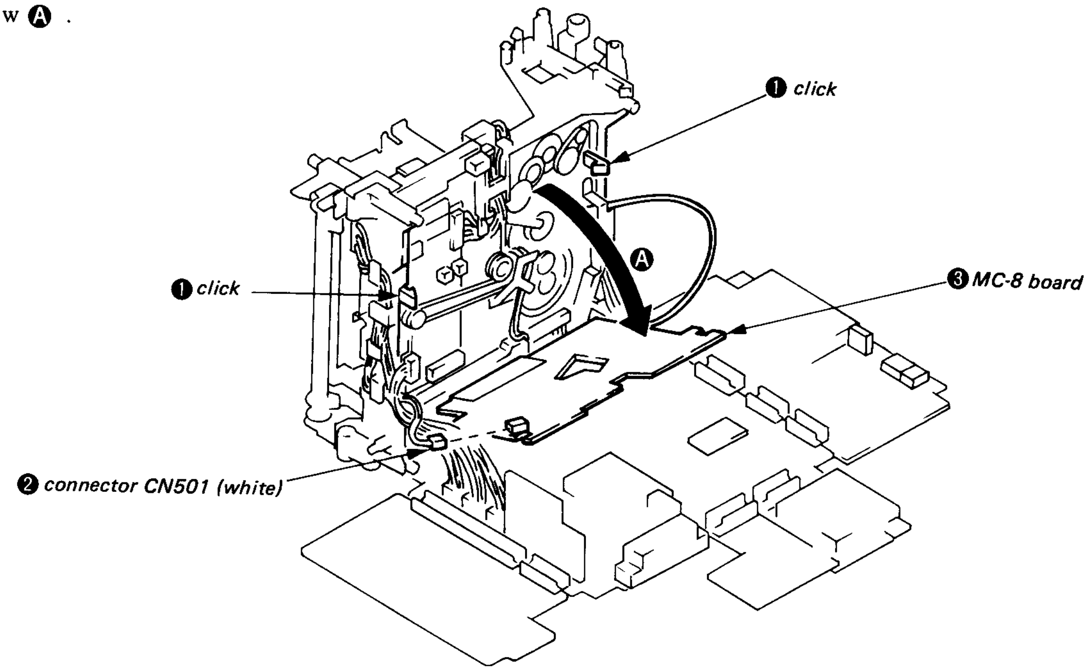
2-10. OPENING OF THE VI-7 BOARD

1) Remove the two screws ❶ and the multiconnector cover ❷.
2) Disconnect the connector CN403 (black) ❸.
3) Remove the screw ❹.
4) Disengage the two clicks ❺ from the VI-7 board ❻.
5) Open the VI-7 board ❻ in the direction shown by the arrow Ⓐ.


❺ click
mechanism section
Ⓐ
❸ connector CN403 (black)
❺ click
❷ multiconnector cover
❹ screw
❶ screws
❻ VI-7 board

2-11. REMOVAL OF THE MC-8 BOARD

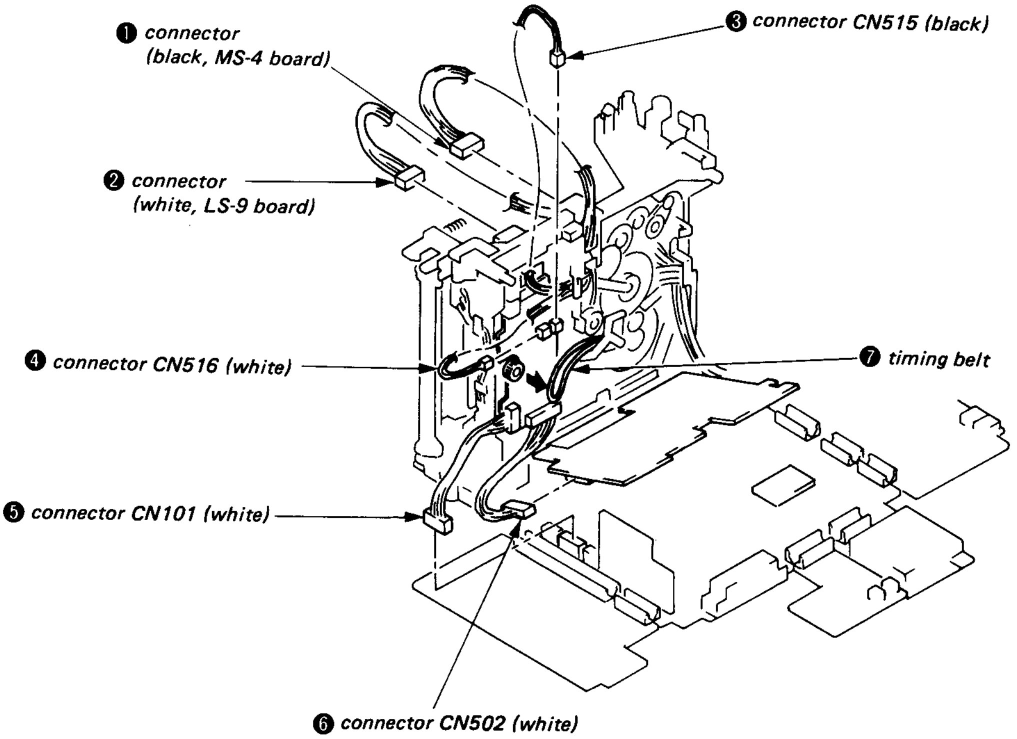
1) Disengage the two clicks ❶ .
2) Disconnect the connector CN501 (white) ❷ .
3) Remove the MC-8 board ❸ in the direction shown by the arrow Ⓐ .


❶ click
Ⓐ
❸ MC-8 board
❶ click
❷ connector CN501 (white)

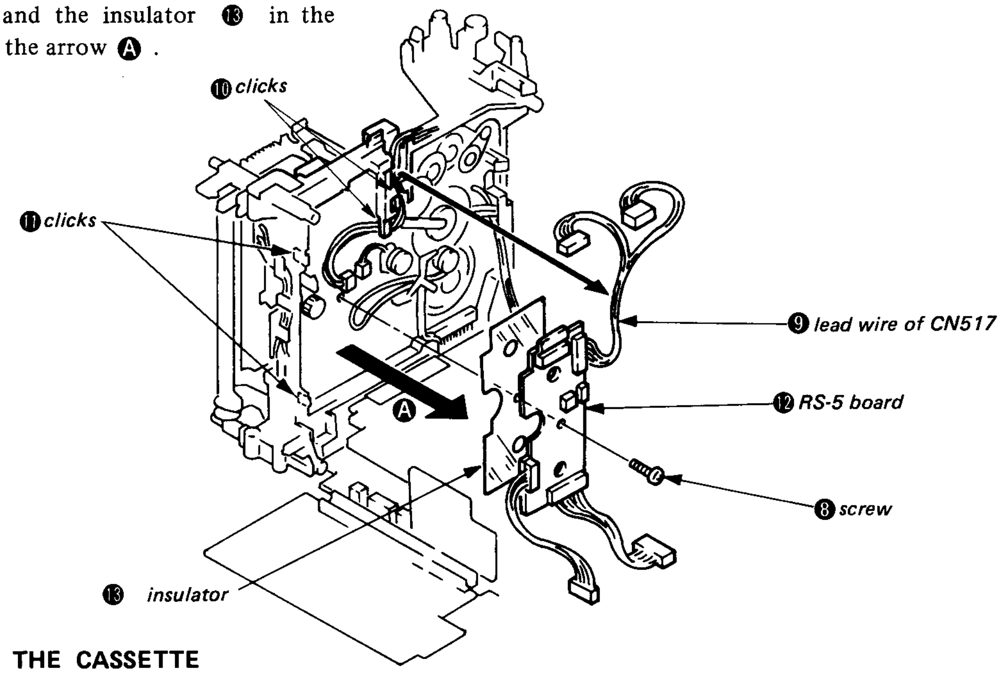
2-12. REMOVAL OF THE RS-5 BOARD

1) Disconnect the connectors ❶ to ❻ .
2) Remove the timing belt ❼ from the pulley.

To next page

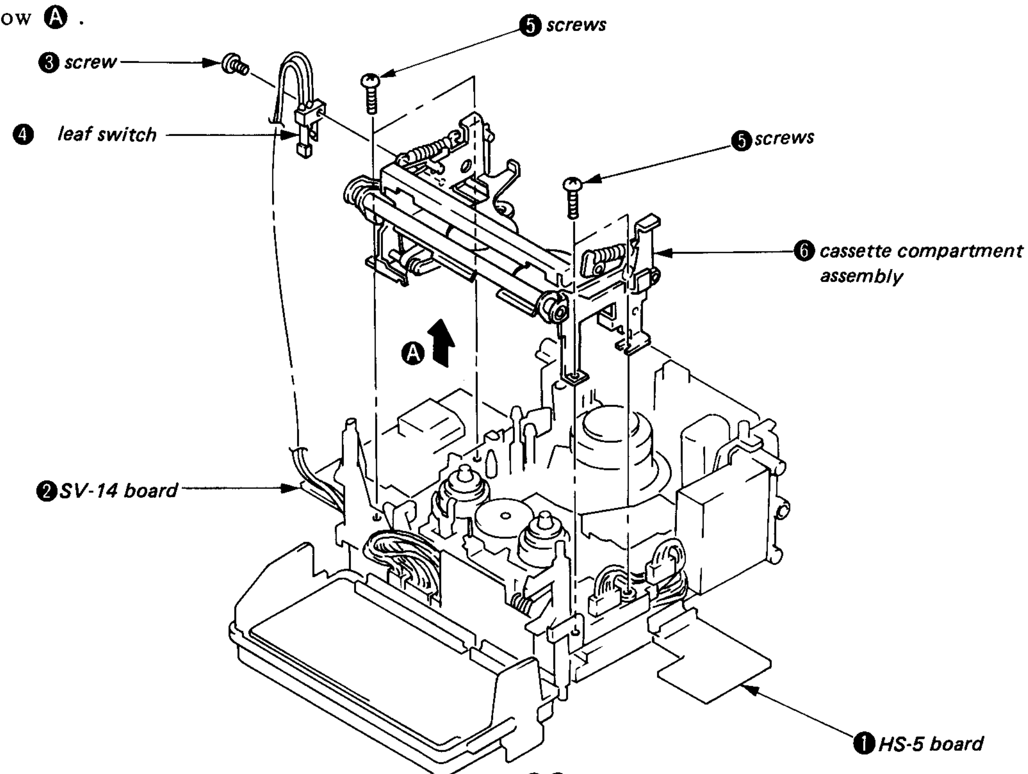

❶ connector
(black, MS-4 board)
❸ connector CN515 (black)
❷ connector
(white, LS-9 board)
❹ connector CN516 (white)
❼ timing belt
❺ connector CN101 (white)
❻ connector CN502 (white)

3) Remove the screw ⑧.
4) Release the lead wire of CN517 ⑨ from the two clicks ⑩.
5) Disengage the two clicks ⑪ and remove the RS-5 board ⑫ and the insulator ⑬ in the direction shown by the arrow Ⓐ.


⑩ clicks
⑪ clicks
⑨ lead wire of CN517
⑫ RS-5 board
Ⓐ
⑧ screw
⑬ insulator

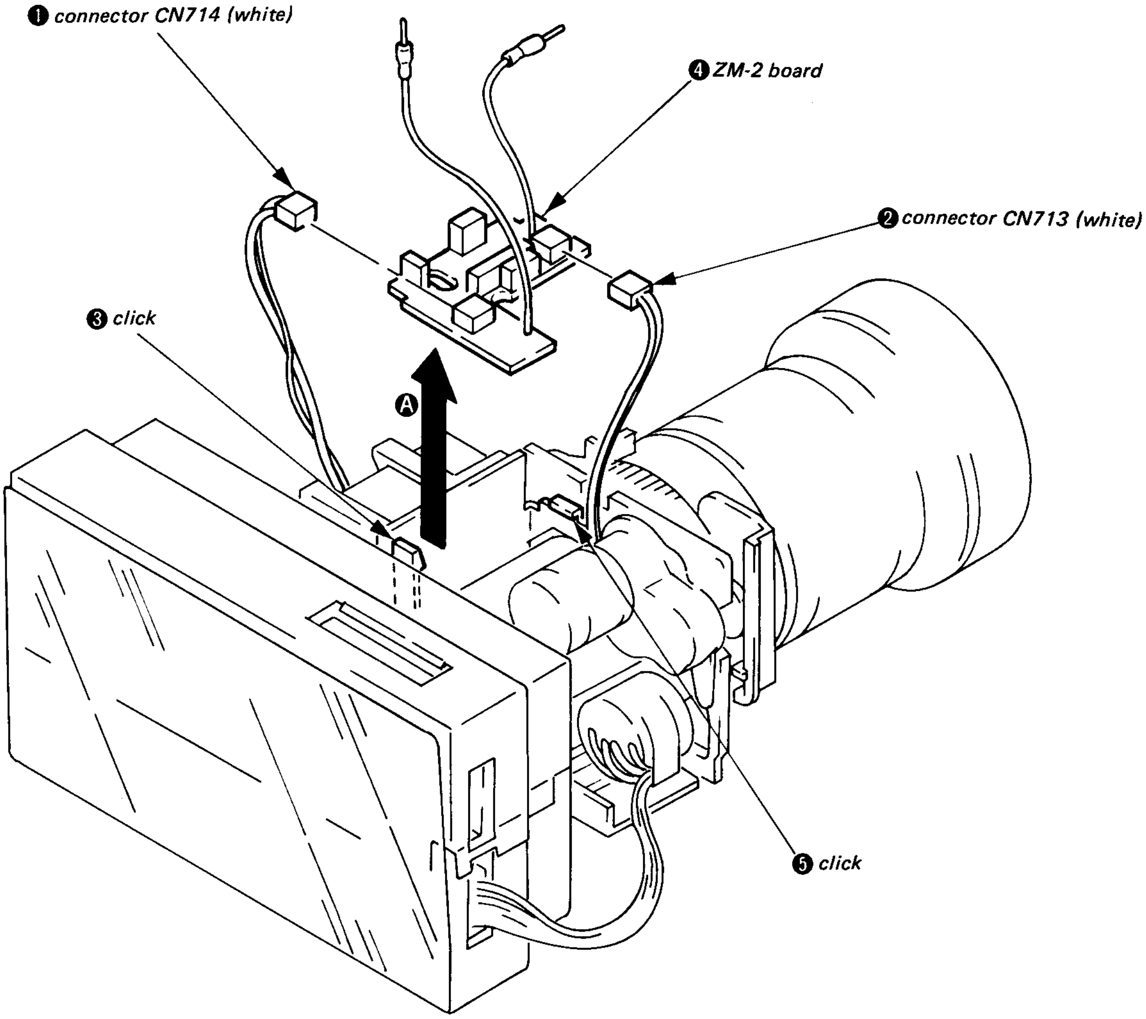
2-13. REMOVAL OF THE CASSETTE COMPARTMENT ASSEMBLY

1) Perform the opening of the HS-5 board ❶ and the SV-14 board ❷ in advance.
2) Remove the screw ❸ and the leaf switch ❹.
3) Remove the four screws ❺ and the cassette compartment assembly ❻ in the direction shown by the arrow Ⓐ.


❺ screws
❸ screw
❹ leaf switch
❺ screws
❻ cassette compartment assembly
Ⓐ
❷ SV-14 board
❶ HS-5 board

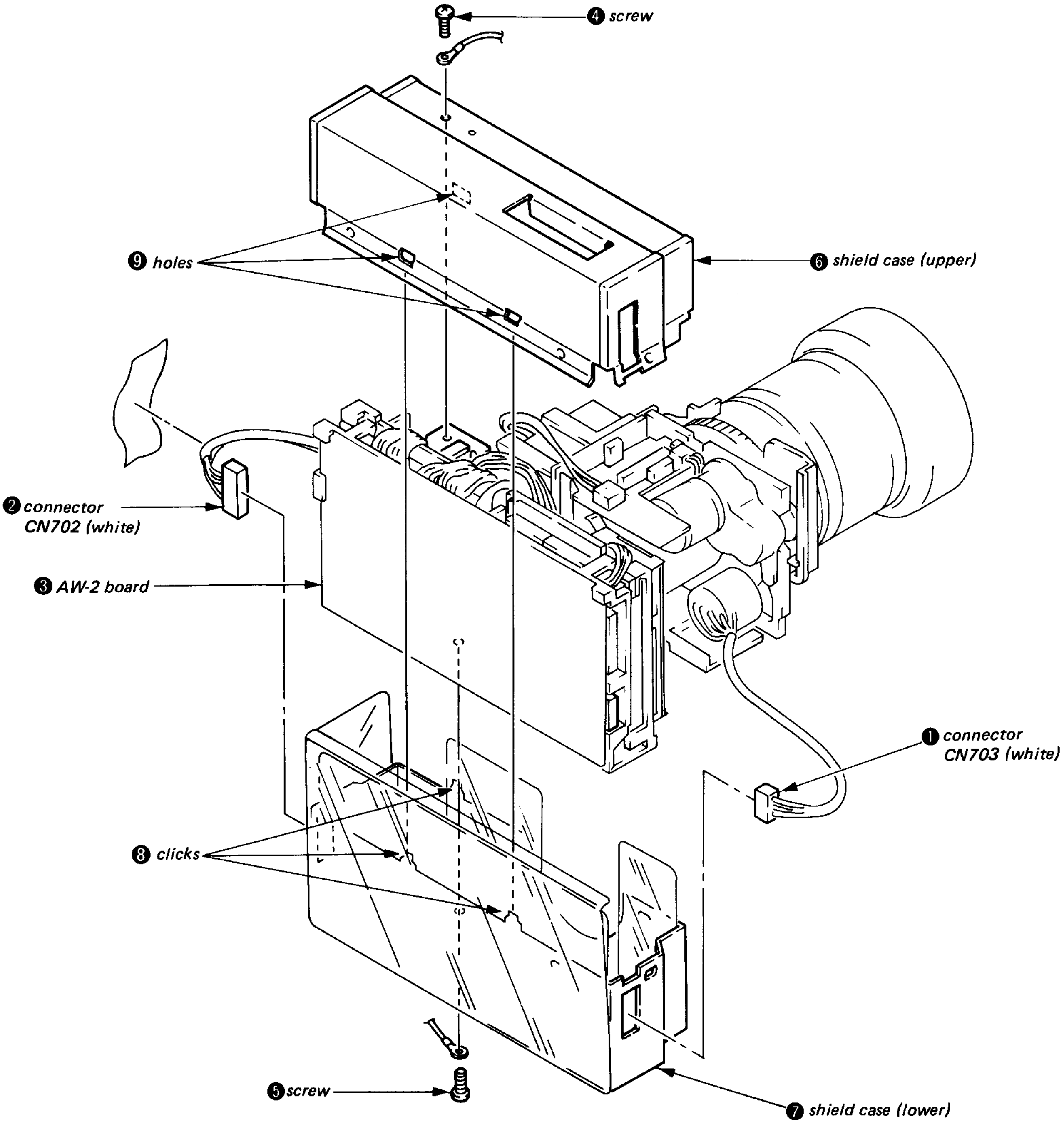
2-14. REMOVAL OF THE ZM-2 BOARD

1) Disconnect the connectors CN714 (white) ❶ and CN713 (white) ❷ .
2) Disengage the click ❸ from the ZM-2 board ❹ .
3) Disengage the click ❺ and remove the ZM-2 board ❹ in the direction shown by the arrow Ⓐ .


❶ connector CN714 (white)
❹ ZM-2 board
❷ connector CN713 (white)
❸ click
Ⓐ
❺ click

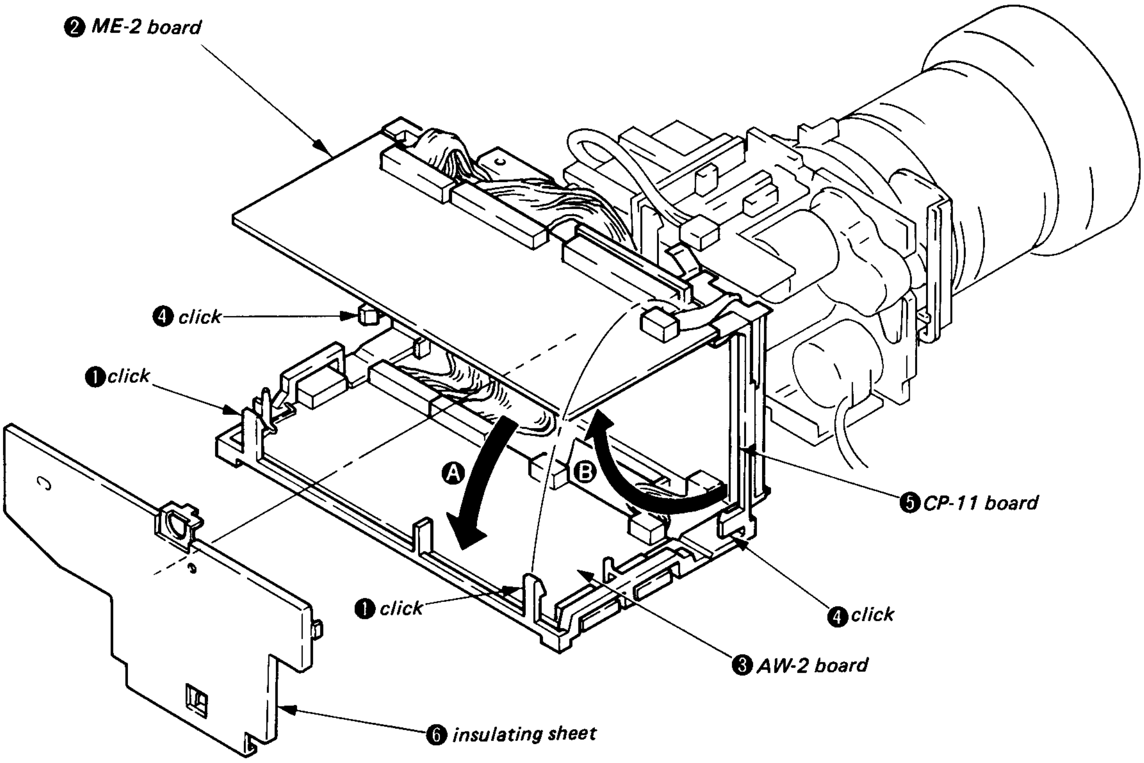
2-15. REMOVAL OF THE (UPPER AND LOWER) SHIELD CASES

1) Disconnect the white connectors CN703 ❶ and CN702 ❷ from the AW-2 board ❸ .
2) Remove the screw ❹ and ❺ .
3) Separate the shield case into the upper part ❻ and the lower part ❼ .
   * When remounting the (upper and lower) shield case, put the clicks ❽ into the holes ❾ .

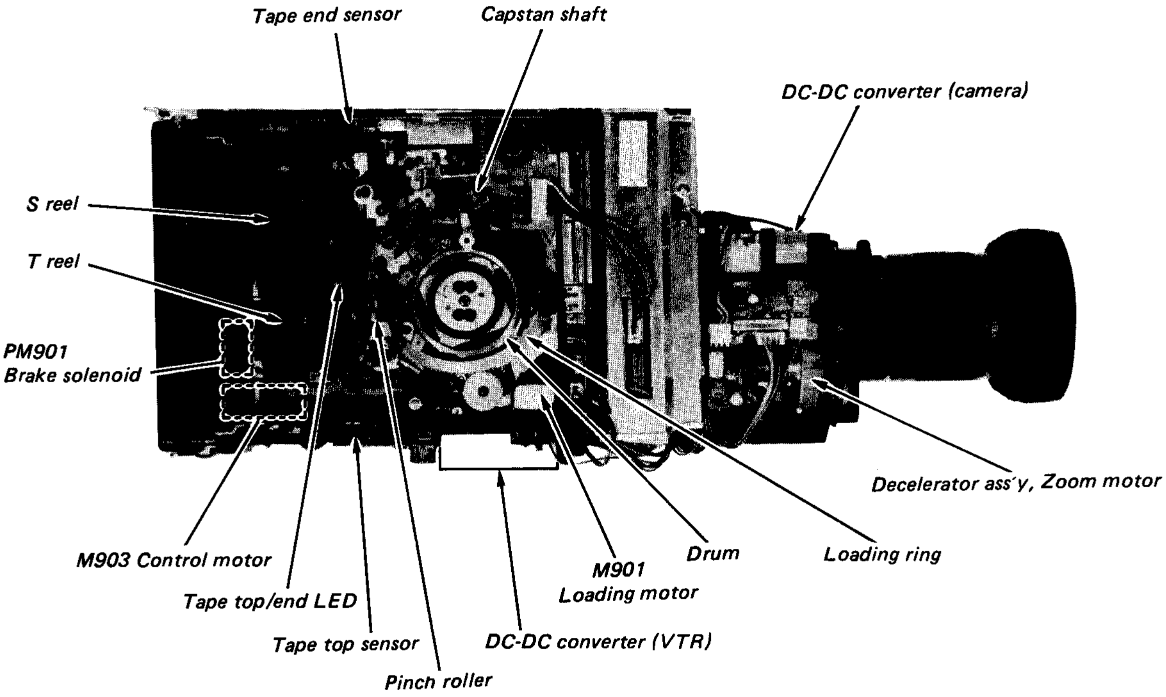

❹ screw
❾ holes
❻ shield case (upper)
❷ connector CN702 (white)
❸ AW-2 board
❶ connector CN703 (white)
❽ clicks
❺ screw
❼ shield case (lower)

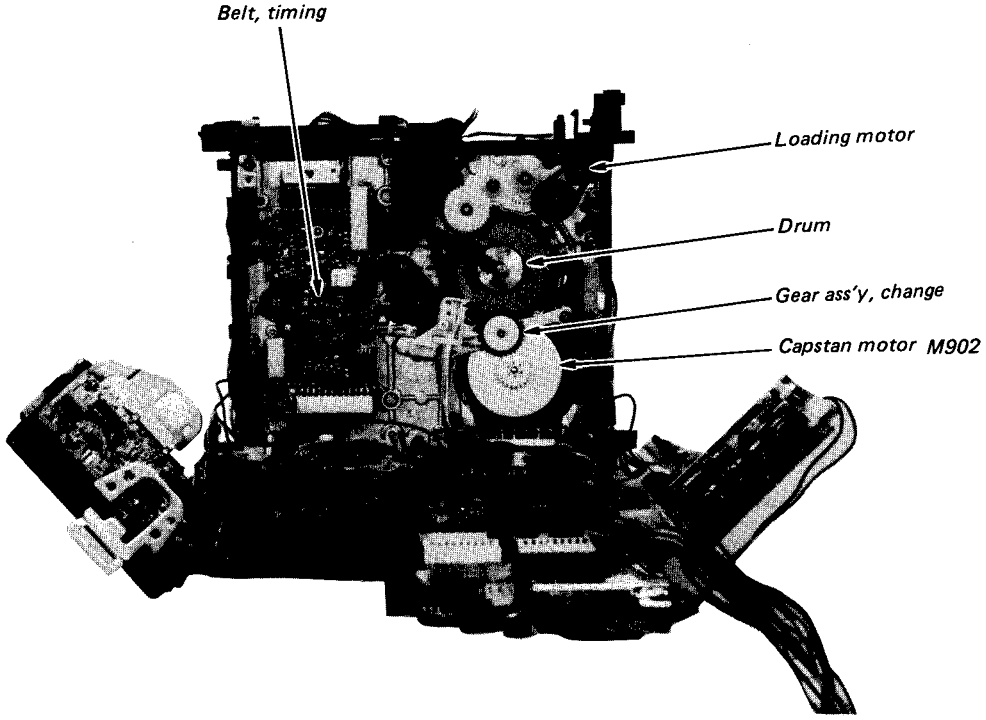
2-16. OPENING OF THE AW-2 AND THE ME-2 BOARDS

1) Disengage the two clicks ❶ from the ME-2 board ❷.
2) Open the AW-2 board ❸ in the direction shown by the arrow Ⓐ.
3) Disengage the two clicks ❹ from the ME-2 board ❷.
4) Lift the ME-2 board ❷ in the direction shown by the arrow Ⓑ.
5) Remove the insulating sheet ❻ from the CP-11 board ❺.


❷ ME-2 board
❹ click
❶ click
Ⓐ
Ⓑ
❺ CP-11 board
❶ click
❹ click
❸ AW-2 board
❻ insulating sheet

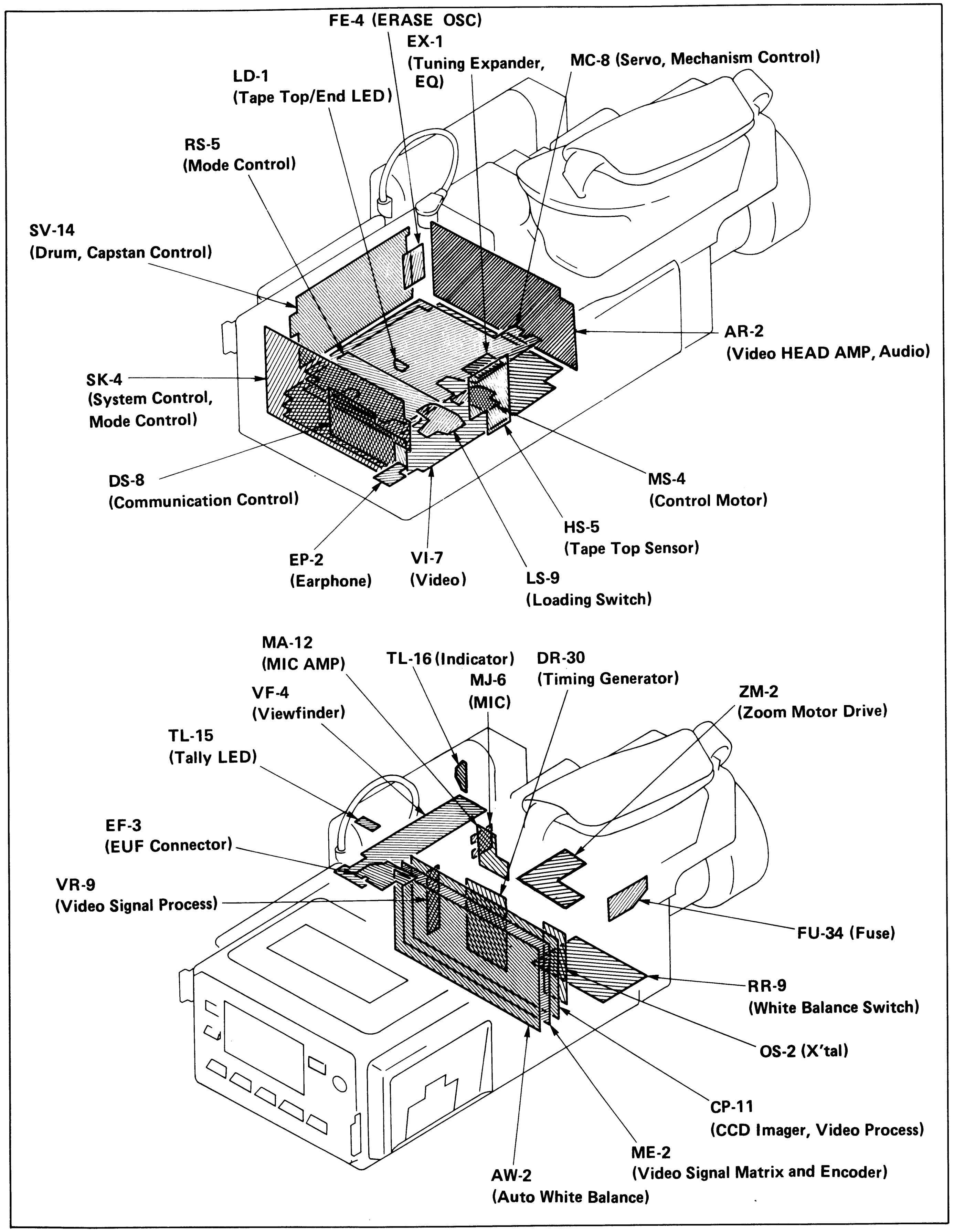
2-17. INTERNAL VIEW


Tape end sensor
Capstan shaft
DC-DC converter (camera)
S reel
T reel
PM901
Brake solenoid
Decelerator ass'y, Zoom motor
M903 Control motor
Drum
Loading ring
M901
Loading motor
Tape top/end LED
Tape top sensor
DC-DC converter (VTR)
Pinch roller

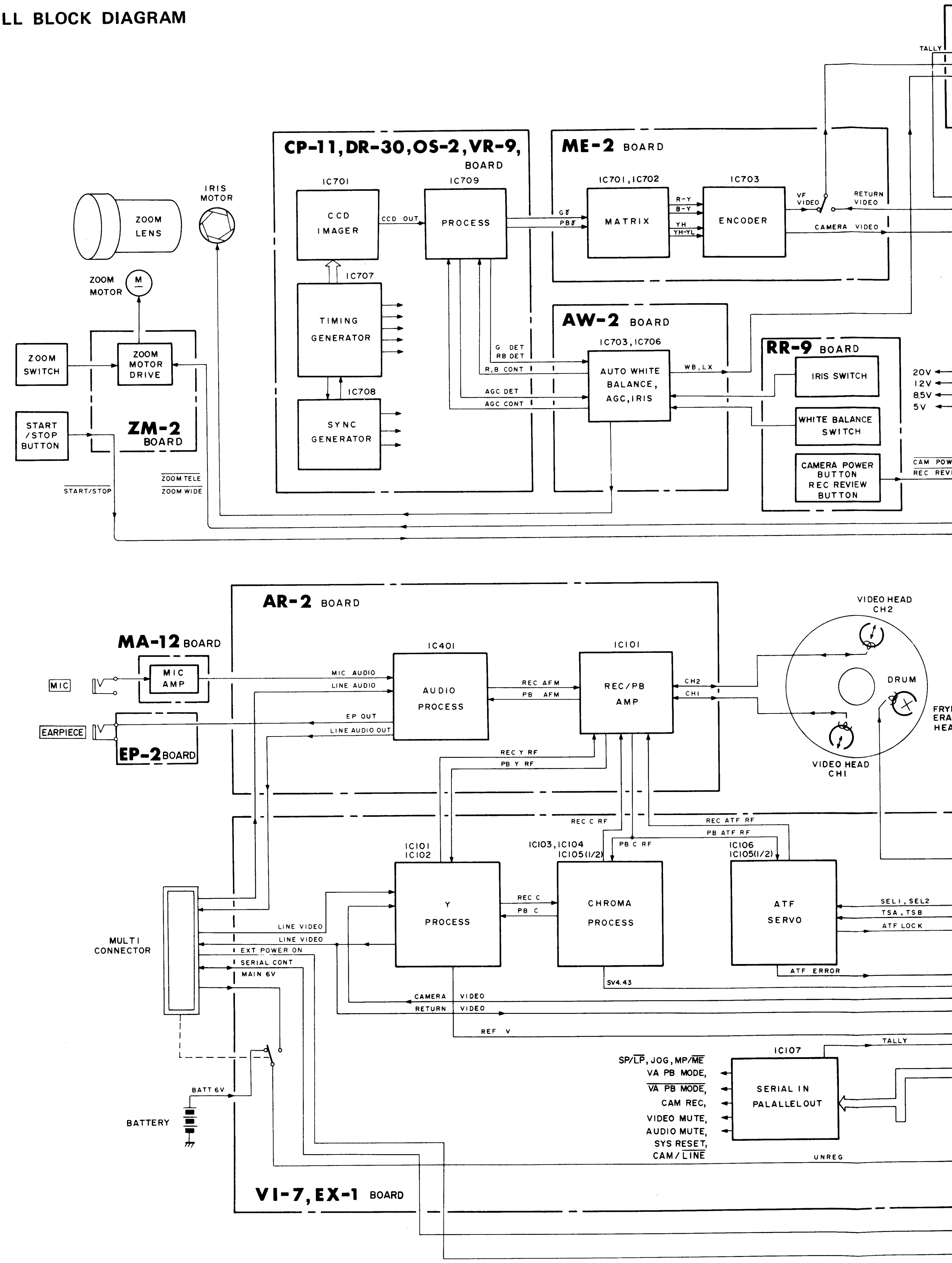

Belt, timing
Loading motor
Drum
Gear ass'y, change
Capstan motor M902

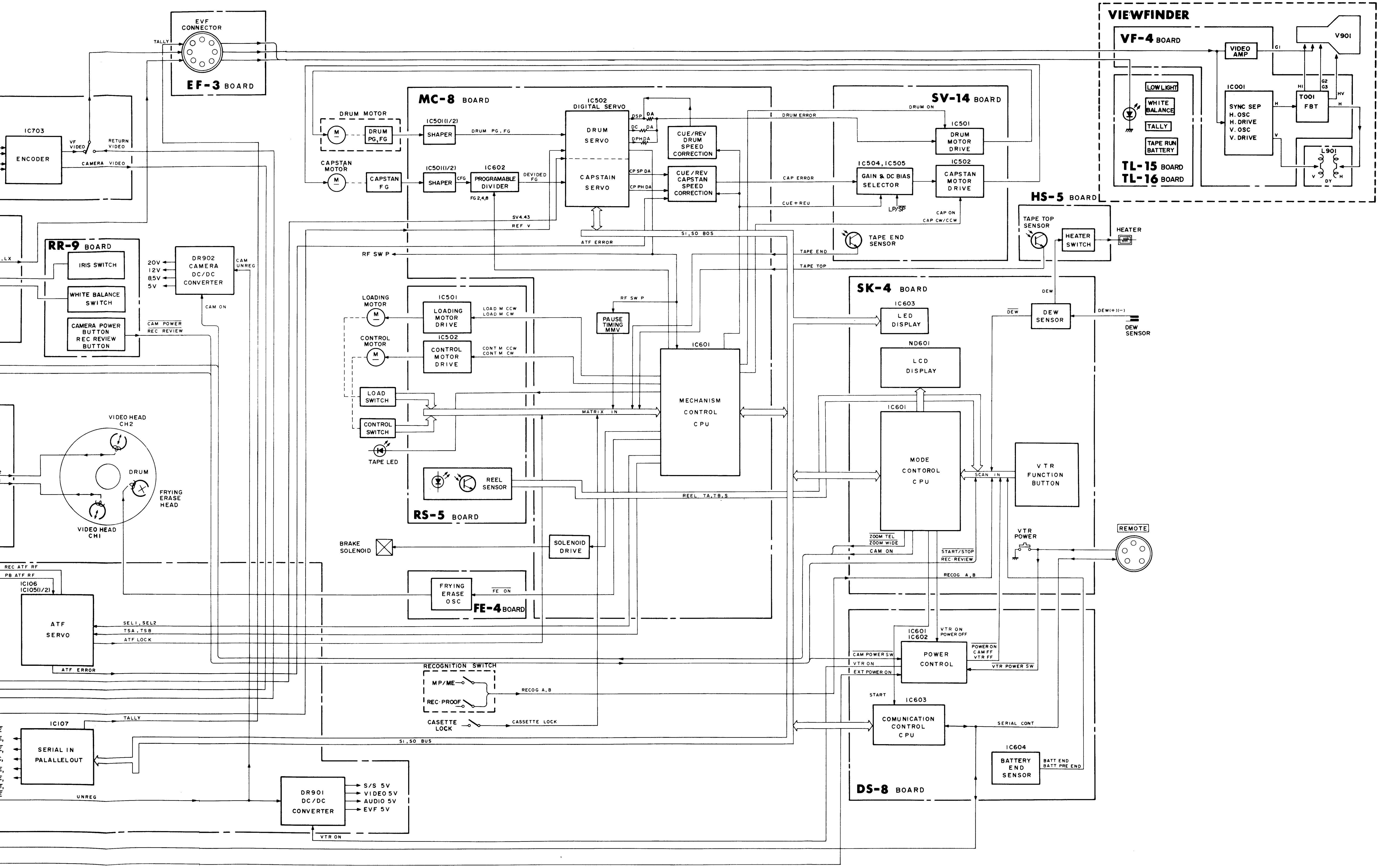
SECTION 3
DIAGRAMS

3-1. CIRCUIT BOARDS LOCATION

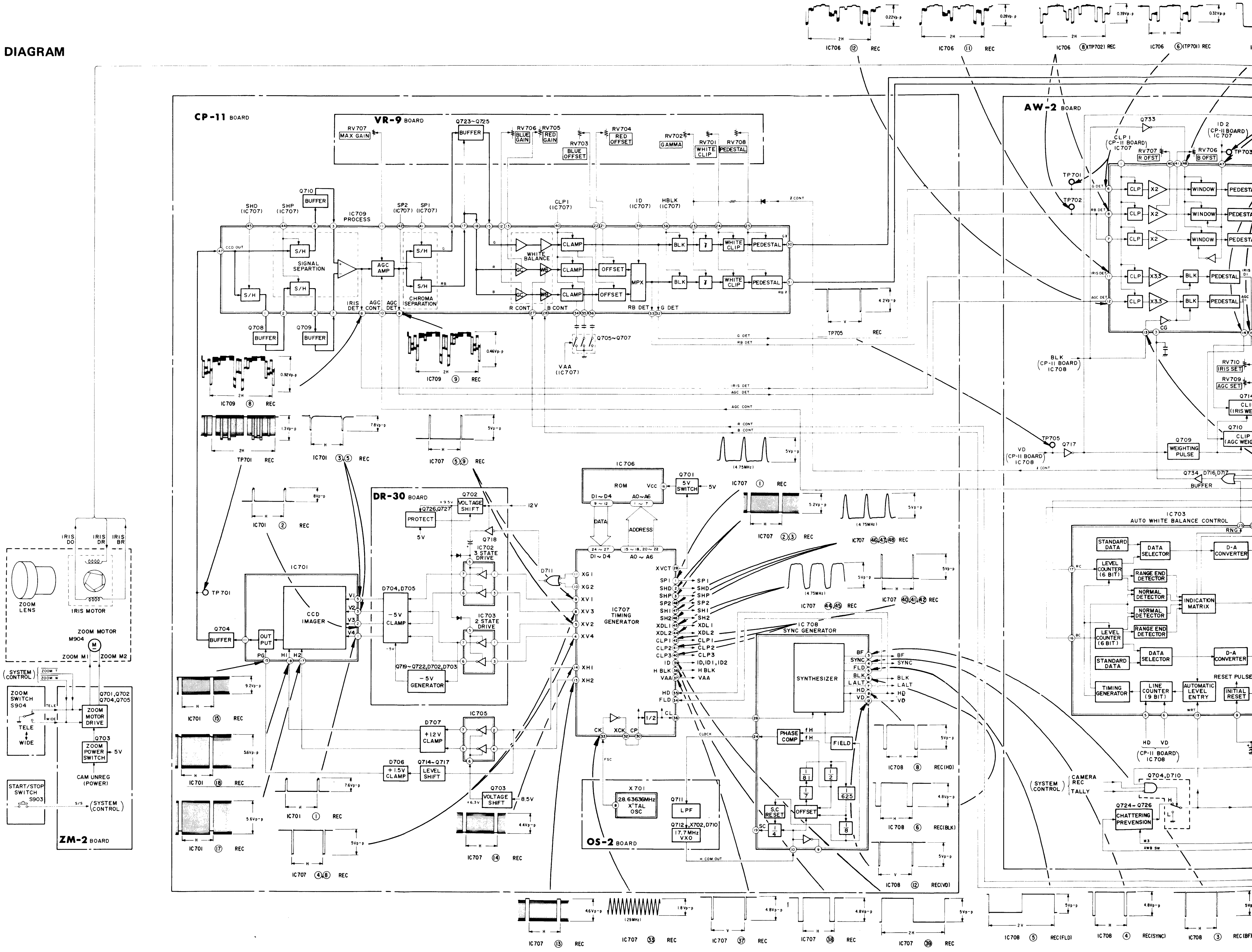

FE-4 (ERASE OSC)
EX-1 (Tuning Expander, EQ)
MC-8 (Servo, Mechanism Control)
LD-1 (Tape Top/End LED)
RS-5 (Mode Control)
SV-14 (Drum, Capstan Control)
AR-2 (Video HEAD AMP, Audio)
SK-4 (System Control, Mode Control)
DS-8 (Communication Control)
MS-4 (Control Motor)
HS-5 (Tape Top Sensor)
EP-2 (Earphone)
VI-7 (Video)
LS-9 (Loading Switch)
MA-12 (MIC AMP)
TL-16 (Indicator)
DR-30 (Timing Generator)
MJ-6 (MIC)
VF-4 (Viewfinder)
ZM-2 (Zoom Motor Drive)
TL-15 (Tally LED)
EF-3 (EUF Connector)
VR-9 (Video Signal Process)
FU-34 (Fuse)
RR-9 (White Balance Switch)
OS-2 (X'tal)
CP-11 (CCD Imager, Video Process)
ME-2 (Video Signal Matrix and Encoder)
AW-2 (Auto White Balance)

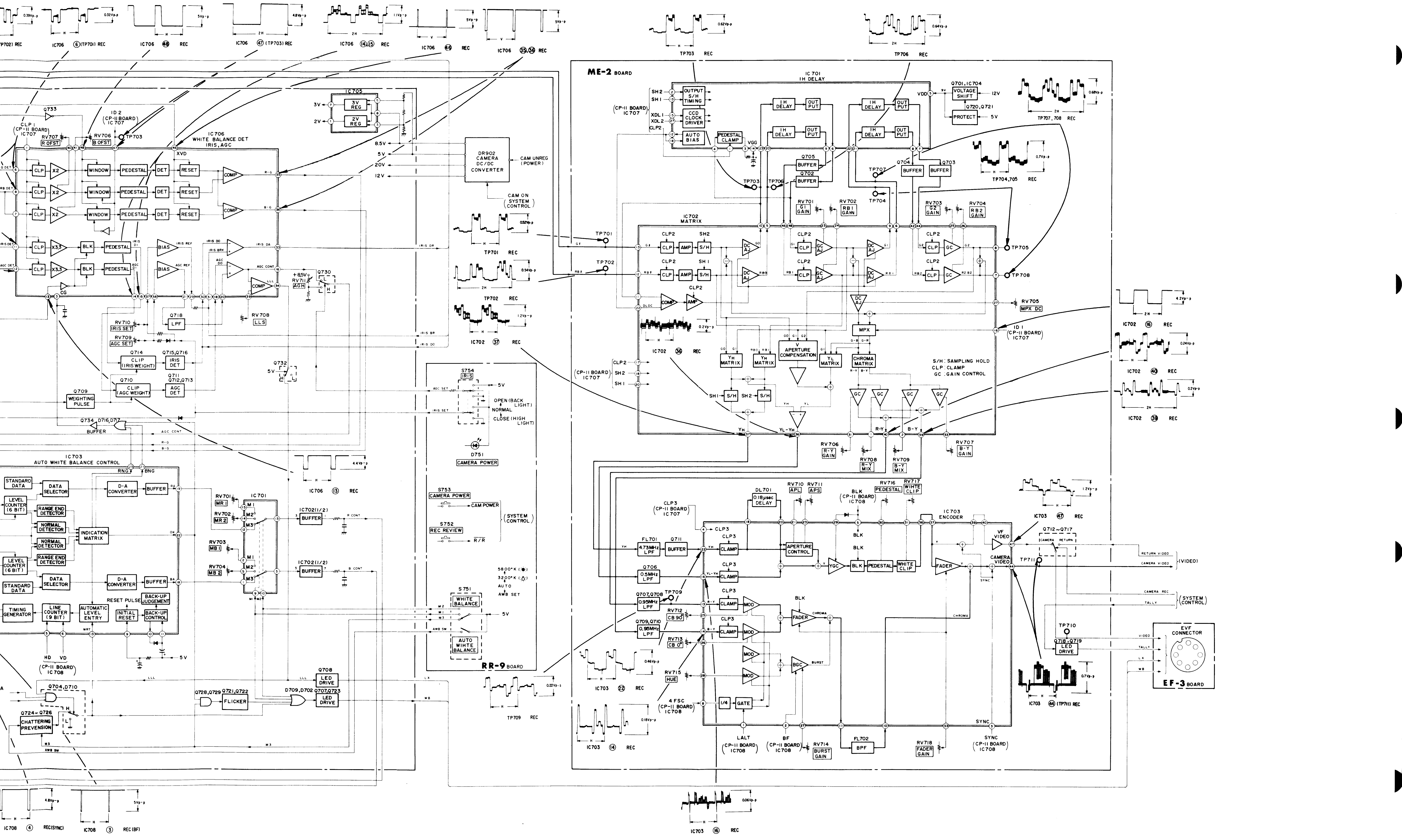
3-2. OVERALL BLOCK DIAGRAM


TALLY
CP-11, DR-30, OS-2, VR-9, BOARD
IC701
CCD IMAGER
CCD OUT
IC709
PROCESS
IC707
TIMING GENERATOR
IC708
SYNC GENERATOR
G DET
RB DET
R,B CONT
AGC DET
AGC CONT
ME-2 BOARD
IC701, IC702
MATRIX
Gγ
PBγ
R-Y
B-Y
YH
YH-YL
IC703
ENCODER
VF VIDEO
RETURN VIDEO
CAMERA VIDEO
AW-2 BOARD
IC703, IC706
AUTO WHITE BALANCE, AGC, IRIS
WB, LX
RR-9 BOARD
IRIS SWITCH
WHITE BALANCE SWITCH
CAMERA POWER BUTTON REC REVIEW BUTTON
20V
12V
8.5V
5V
CAM POW
REC REVI
ZOOM LENS
IRIS MOTOR
ZOOM MOTOR
M
ZOOM SWITCH
ZOOM MOTOR DRIVE
START /STOP BUTTON
ZM-2 BOARD
START/STOP
ZOOM TELE
ZOOM WIDE
AR-2 BOARD
MA-12 BOARD
MIC AMP
MIC
EARPIECE
EP-2 BOARD
MIC AUDIO
LINE AUDIO
EP OUT
LINE AUDIO OUT
IC401
AUDIO PROCESS
REC AFM
PB AFM
IC101
REC/PB AMP
CH2
CH1
VIDEO HEAD CH2
DRUM
VIDEO HEAD CH1
FRY
ERA
HEA
REC Y RF
PB Y RF
REC C RF
REC ATF RF
PB ATF RF
PB C RF
IC101
IC102
Y PROCESS
REC C
PB C
IC103, IC104
IC105(1/2)
CHROMA PROCESS
IC106
IC105(1/2)
ATF SERVO
SEL1, SEL2
TSA, TSB
ATF LOCK
ATF ERROR
SV4.43
MULTI CONNECTOR
LINE VIDEO
LINE VIDEO
EXT POWER ON
SERIAL CONT
MAIN 6V
CAMERA VIDEO
RETURN VIDEO
REF V
BATT 6V
BATTERY
IC107
TALLY
SERIAL IN PALALLELOUT
SP/$\overline{LP}$, JOG, MP/$\overline{ME}$
VA PB MODE,
$\overline{VA PB MODE}$,
CAM REC,
VIDEO MUTE,
AUDIO MUTE,
SYS RESET,
CAM/$\overline{LINE}$
UNREG
VI-7, EX-1 BOARD

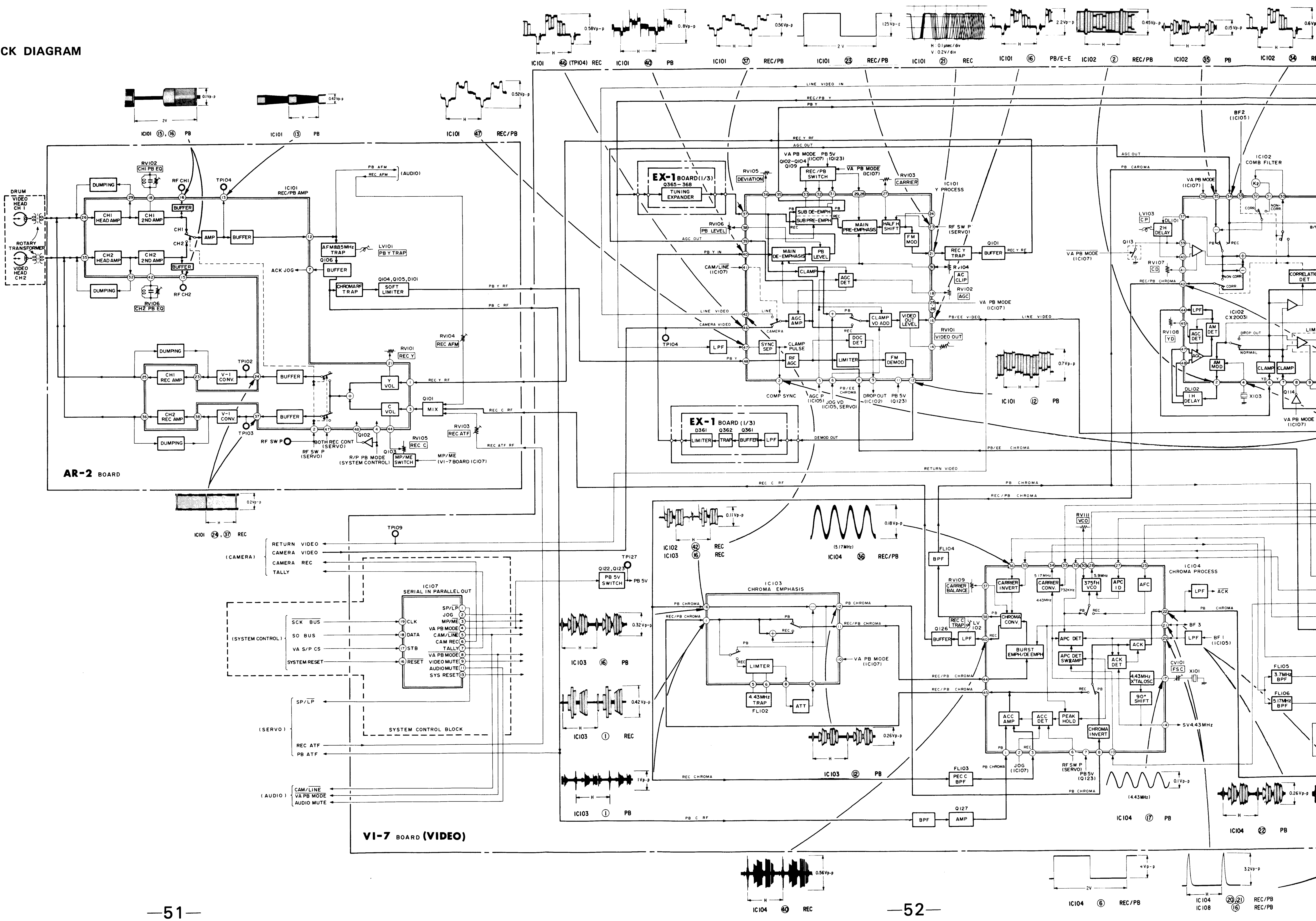

EVF CONNECTOR
TALLY
EF-3 BOARD
IC703
ENCODER
VF VIDEO
RETURN VIDEO
CAMERA VIDEO
RR-9 BOARD
IRIS SWITCH
WHITE BALANCE SWITCH
CAMERA POWER BUTTON REC REVIEW BUTTON
CAM POWER
REC REVIEW
DR902 CAMERA DC/DC CONVERTER
20V
12V
8.5V
5V
CAM UNREG
CAM ON
MC-8 BOARD
DRUM MOTOR
DRUM PG,FG
IC501(1/2)
SHAPER
DRUM PG, FG
IC502 DIGITAL SERVO
DRUM SERVO
CAPSTAIN SERVO
DSP
DC
DPH
DA
CP SP DA
CP PH DA
CUE/REV DRUM SPEED CORRECTION
CUE/REV CAPSTAN SPEED CORRECTION
CAPSTAN MOTOR
CAPSTAN FG
CFG
IC602
PROGRAMABLE DIVIDER
DEVIDED FG
FG 2,4,8
SV4.43
REF V
ATF ERROR
SI, SO BUS
RF SW P
SV-14 BOARD
DRUM ON
DRUM ERROR
IC501
DRUM MOTOR DRIVE
IC504, IC505
GAIN & DC BIAS SELECTOR
CAP ERROR
CUE+REV
LP/SP
IC502
CAPSTAN MOTOR DRIVE
CAP ON
CAP CW/CCW
TAPE END SENSOR
TAPE END
TAPE TOP
LOADING MOTOR
IC501
LOADING MOTOR DRIVE
LOAD M CCW
LOAD M CW
CONTROL MOTOR
IC502
CONTROL MOTOR DRIVE
CONT M CCW
CONT M CW
LOAD SWITCH
CONTROL SWITCH
TAPE LED
PAUSE TIMING MMV
RF SW P
IC601
MECHANISM CONTROL CPU
MATRIX IN
REEL SENSOR
RS-5 BOARD
REEL TA,TB,S
BRAKE SOLENOID
SOLENOID DRIVE
FRYING ERASE OSC
FE ON
FE-4 BOARD
VIDEO HEAD CH2
DRUM
FRYING ERASE HEAD
VIDEO HEAD CH1
REC ATF RF
PB ATF RF
IC106
IC105(1/2)
ATF SERVO
SEL1, SEL2
TSA, TSB
ATF LOCK
ATF ERROR
IC107
SERIAL IN PALALLEL OUT
TALLY
UNREG
DR901 DC/DC CONVERTER
S/S 5V
VIDEO 5V
AUDIO 5V
EVF 5V
VTR ON
RECOGNITION SWITCH
MP/ME
REC-PROOF
RECOG A, B
CASETTE LOCK
CASSETTE LOCK
VIEWFINDER
VF-4 BOARD
VIDEO AMP
V901
G1
G2
G3
HV
H1
IC001
SYNC SEP
H. OSC
H. DRIVE
V. OSC
V. DRIVE
T001
FBT
L901
DY
H
V
LOW LIGHT
WHITE BALANCE
TALLY
TAPE RUN BATTERY
TL-15 BOARD
TL-16 BOARD
HS-5 BOARD
TAPE TOP SENSOR
HEATER SWITCH
HEATER
DEW
SK-4 BOARD
IC603
LED DISPLAY
ND601
LCD DISPLAY
IC601
MODE CONTOROL CPU
DEW SENSOR
DEW(+)(-)
VTR FUNCTION BUTTON
SCAN IN
ZOOM TEL
ZOOM WIDE
CAM ON
START/STOP
REC REVIEW
RECOG A, B
VTR POWER
REMOTE
DS-8 BOARD
IC601
IC602
POWER CONTROL
VTR ON
POWER OFF
POWER ON
CAM FF
VTR FF
CAM POWER SW
VTR ON
EXT POWER ON
VTR POWER SW
START
IC603
COMUNICATION CONTROL CPU
SERIAL CONT
IC604
BATTERY END SENSOR
BATT END
BATT PRE END

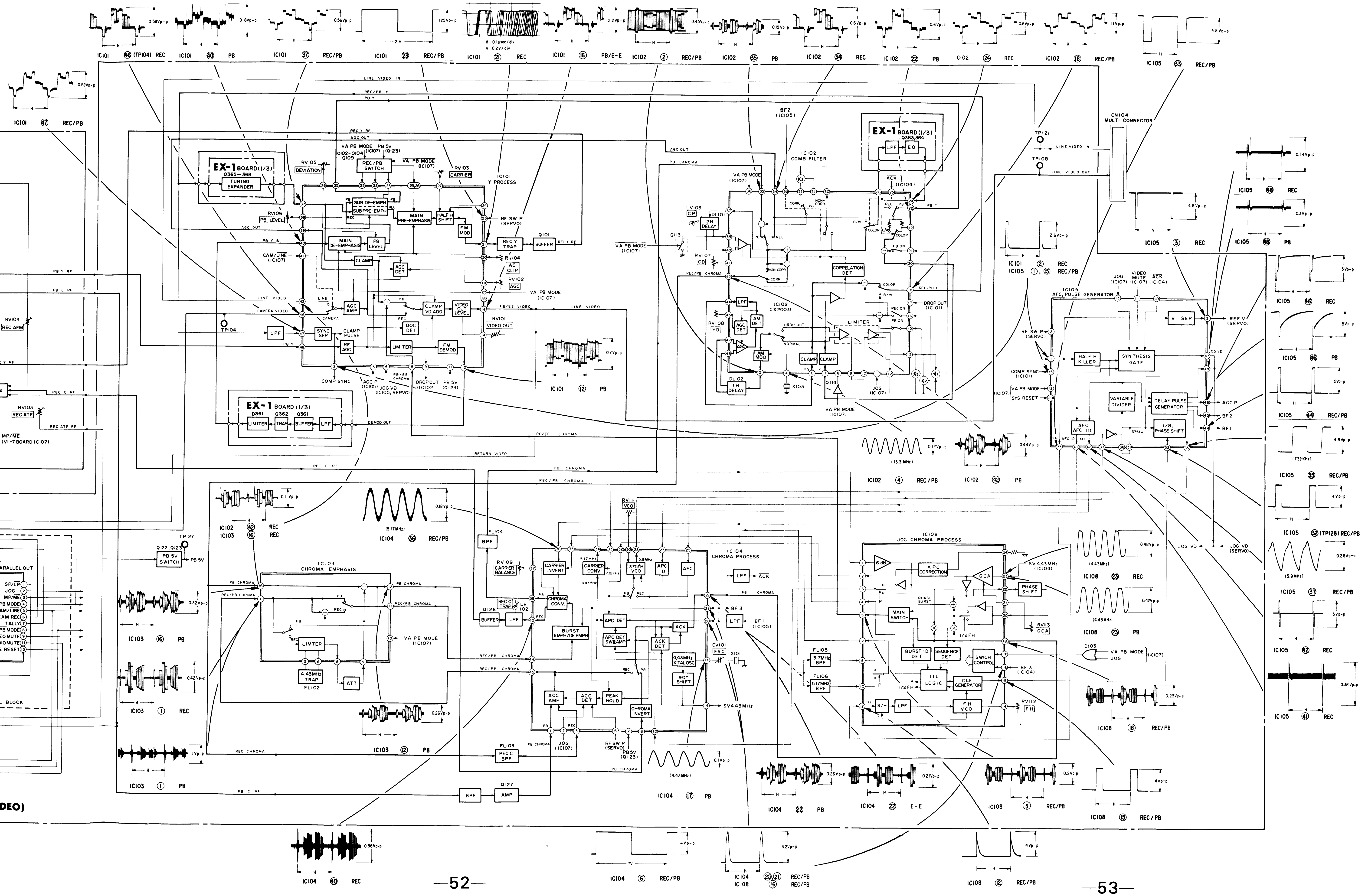
3-3. CAMERA SYSTEM BLOCK DIAGRAM


CP-11 BOARD
VR-9 BOARD
RV707 MAX GAIN
Q723~Q725 BUFFER
RV706 BLUE GAIN
RV705 RED GAIN
RV703 BLUE OFFSET
RV704 RED OFFSET
RV702 GAMMA
RV701 WHITE CLIP
RV708 PEDESTAL
Q710 BUFFER
SHD (IC707)
SHP (IC707)
IC709 PROCESS
SP2 (IC707)
SP1 (IC707)
CLP1 (IC707)
ID (IC707)
HBLK (IC707)
CCD OUT
S/H
SIGNAL SEPARATION
AGC AMP
CHROMA SEPARATION
WHITE BALANCE
CLAMP
OFFSET
MPX
BLK
γ
WHITE CLIP
PEDESTAL
IRIS DET
AGC CONT
AGC DET
R CONT
B CONT
RB DET
G DET
Q708 BUFFER
Q709 BUFFER
Q705~Q707
VAA (IC707)
IC709 ⑧ REC
IC709 ⑨ REC
TP701 REC
IC701 ③,⑤ REC
IC707 ⑤,⑨ REC
IC701 ② REC
DR-30 BOARD
PROTECT
Q726,Q727
Q702 VOLTAGE SHIFT
12V
Q718
IC702 3 STATE DRIVE
IC703 2 STATE DRIVE
D704,D705
-5V CLAMP
Q719~Q722,D702,D703
-5V GENERATOR
D711
IC701
CCD IMAGER
OUT PUT
Q704 BUFFER
TP701
V1 V2 V3 V4
PG H1 H2
IC705
D707 +12V CLAMP
D706 +1.5V CLAMP
Q714~Q717 LEVEL SHIFT
Q703 VOLTAGE SHIFT
8.5V
+6.3V
IC701 ⑮ REC
IC701 ⑱ REC
IC701 ⑰ REC
IC701 ① REC
IC707 ④,⑧ REC
IC707 ⑭ REC
IC706
ROM
D1~D4
A0~A6
DATA
ADDRESS
Q701 5V SWITCH
5V
IC707 TIMING GENERATOR
XG1 XG2 XV1 XV3 XV2 XV4 XH1 XH2
XVCT SP1 SHD SHP SP2 SH1 SH2 XDL1 XDL2 CLP1 CLP2 CLP3 ID HBLK VAA HD FLD
ID,ID1,ID2
CK XCK CP CL
1/2
FSC
OS-2 BOARD
X701 28.63636MHz X'TAL OSC
Q711 LPF
Q712,X702,D710 17.7MHz VXO
IC708 SYNC GENERATOR
SYNTHESIZER
BF SYNC FLD BLK LALT HD VD
PHASE COMP
FIELD
S.C RESET
OFFSET
1/81 1/7 1/2 1/625 1/8 1/4
CLOCK
H COM OUT
IC707 ① REC
IC707 ②,③ REC
IC707 ㊻,㊼,㊽ REC
IC707 ㊹,㊺ REC
IC707 ㊵,㊶,㊷ REC
IC708 ⑧ REC(HD)
IC708 ⑥ REC(BLK)
IC708 ⑫ REC(VD)
IC707 ⑬ REC
IC707 ㉝ REC
IC707 ㊲ REC
IC707 ㊳ REC
IC707 ㊴ REC
IC706 ⑫ REC
IC706 ⑪ REC
IC706 ⑧(TP702) REC
IC706 ⑥(TP701) REC
TP705 REC
IC708 ⑤ REC(FLD)
IC708 ④ REC(SYNC)
IC708 ③ REC(BF)
AW-2 BOARD
Q733
ID2 (CP-11 BOARD) IC707
CLP1 (CP-11 BOARD) IC707
RV707 R OFST
RV706 B OFST
TP701
TP702
TP703
G DET
RB DET
IRIS DET
AGC DET
CLP
X2
X3.3
WINDOW
PEDESTAL
BLK
CG
BLK (CP-11 BOARD) IC708
RV710 IRIS SET
RV709 AGC SET
Q710 CLIP (AGC WEIGHT)
Q709 WEIGHTING PULSE
TP705
Q717
VD (CP-11 BOARD) IC708
Q734, D716, D717 BUFFER
IC703 AUTO WHITE BALANCE CONTROL
STANDARD DATA
LEVEL COUNTER (6 BIT)
DATA SELECTOR
D-A CONVERTER
RANGE END DETECTOR
NORMAL DETECTOR
INDICATION MATRIX
TIMING GENERATOR
LINE COUNTER (9 BIT)
AUTOMATIC LEVEL ENTRY
INITIAL RESET
RESET PULSE
HD VD (CP-11 BOARD) IC708
(SYSTEM CONTROL) CAMERA REC TALLY
Q704,D710
Q724~Q726 CHATTERING PREVENSION
AWB SW
IRIS DO
IRIS DR
IRIS BR
ZOOM LENS
IRIS MOTOR
ZOOM MOTOR M904
ZOOM M1
ZOOM M2
(SYSTEM CONTROL)
ZOOM T
ZOOM W
ZOOM SWITCH S904
TELE
WIDE
Q701,Q702 Q704,Q705
ZOOM MOTOR DRIVE
Q703 ZOOM POWER SWITCH
5V
CAM UNREG (POWER)
START/STOP SWITCH S903
S/S (SYSTEM CONTROL)
ZM-2 BOARD


ME-2 BOARD
RR-9 BOARD
EF-3 BOARD
IC706 WHITE BALANCE DET IRIS, AGC
IC703 AUTO WHITE BALANCE CONTROL
IC705
DR902 CAMERA DC/DC CONVERTER
CAM UNREG (POWER)
CAM ON (SYSTEM CONTROL)
IC701 1H DELAY
IC702 MATRIX
IC703 ENCODER
IC701
Q701, IC704 VOLTAGE SHIFT
Q720, Q721 PROTECT
OUTPUT S/H TIMING
CCD CLOCK DRIVER
AUTO BIAS
PEDESTAL CLAMP
1H DELAY
OUT PUT
BUFFER
CLP
X2
X3.3
WINDOW
PEDESTAL
DET
RESET
COMP
BLK
BIAS
LPF
CLIP (IRIS WEIGHT)
CLIP (AGC WEIGHT)
IRIS DET
AGC DET
WEIGHTING PULSE
STANDARD DATA
DATA SELECTOR
LEVEL COUNTER (6 BIT)
RANGE END DETECTOR
NORMAL DETECTOR
INDICATION MATRIX
D-A CONVERTER
TIMING GENERATOR
LINE COUNTER (9 BIT)
AUTOMATIC LEVEL ENTRY
INITIAL RESET
BACK-UP JUDGEMENT
BACK-UP CONTROL
RESET PULSE
CHATTERING PREVENSION
FLICKER
LED DRIVE
S754 IRIS
OPEN (BACK LIGHT)
NORMAL
CLOSE (HIGH LIGHT)
D751 CAMERA POWER
S753 CAMERA POWER
S752 REC REVIEW
S751 WHITE BALANCE
AUTO WIHTE BALANCE
5800°K
3200°K
AUTO
AWB SET
(SYSTEM CONTROL)
AMP
S/H
DC AJ
GC
COMP
YH MATRIX
YL MATRIX
V APERTURE COMPENSATION
CHROMA MATRIX
MPX
S/H: SAMPLING HOLD
CLP: CLAMP
GC: GAIN CONTROL
RV705 MPX DC
RV701 G1 GAIN
RV702 RB1 GAIN
RV703 G2 GAIN
RV704 RB2 GAIN
RV706 R-Y GAIN
RV707 B-Y GAIN
RV708 R-Y MIX
RV709 B-Y MIX
RV706 B OFST
RV707 R OFST
RV708 LLS
RV709 AGC SET
RV710 IRIS SET
RV711 AGH
RV701 MR1
RV702 MR2
RV703 MB1
RV704 MB2
DL701 0.18μsec DELAY
RV710 APL
RV711 APS
RV716 PEDESTAL
RV717 WHITE CLIP
FL701 4.73MHz LPF
Q706 0.5MHz LPF
Q707, Q708 0.95MHz LPF
Q709, Q710 0.95MHz LPF
CLAMP
MOD
APERTURE CONTROL
YGC
WHITE CLIP
FADER
BGC
1/4
GATE
VF VIDEO
CAMERA VIDEO
RV712 CB 90°
RV713 CB 0°
RV715 HUE
RV714 BURST GAIN
FL702 BPF
RV718 FADER GAIN
4 FSC (CP-11 BOARD) IC708
LALT (CP-11 BOARD) IC708
BF (CP-11 BOARD) IC708
SYNC (CP-11 BOARD) IC708
CLP1 (CP-11 BOARD) IC707
ID2 (CP-11 BOARD) IC707
ID1 (CP-11 BOARD) IC707
CLP3 (CP-11 BOARD) IC707
BLK (CP-11 BOARD) IC708
HD VD (CP-11 BOARD) IC708
Q712~Q717 CAMERA RETURN
RETURN VIDEO
CAMERA VIDEO
(VIDEO)
CAMERA REC
TALLY
Q718, Q719 LED DRIVE
EVF CONNECTOR
TP701
TP702
TP703
TP704
TP705
TP706
TP707
TP708
TP709
TP710
TP711
TP703 REC
TP706 REC
TP707, 708 REC
TP704, 705 REC
TP701 REC
TP702 REC
IC702 ㊲ REC
IC702 ㊱ REC
IC702 ⑯ REC
IC702 ㊵ REC
IC702 ㊴ REC
IC706 ⑬ REC
IC706 ⑥ (TP701) REC
IC706 ㊻ REC
IC706 ㊼ (TP703) REC
IC706 ⑭⑮ REC
IC706 ㊽ REC
IC706 ㉟㊱ REC
IC703 ㊼ REC
IC703 ㉒ REC
IC703 ⑭ REC
IC703 ⑯ REC
IC703 ㊹ (TP711) REC
TP709 REC
IC708 ④ REC(SYNC)
IC708 ③ REC(BF)
3V REG
2V REG
8.5V
5V
20V
12V

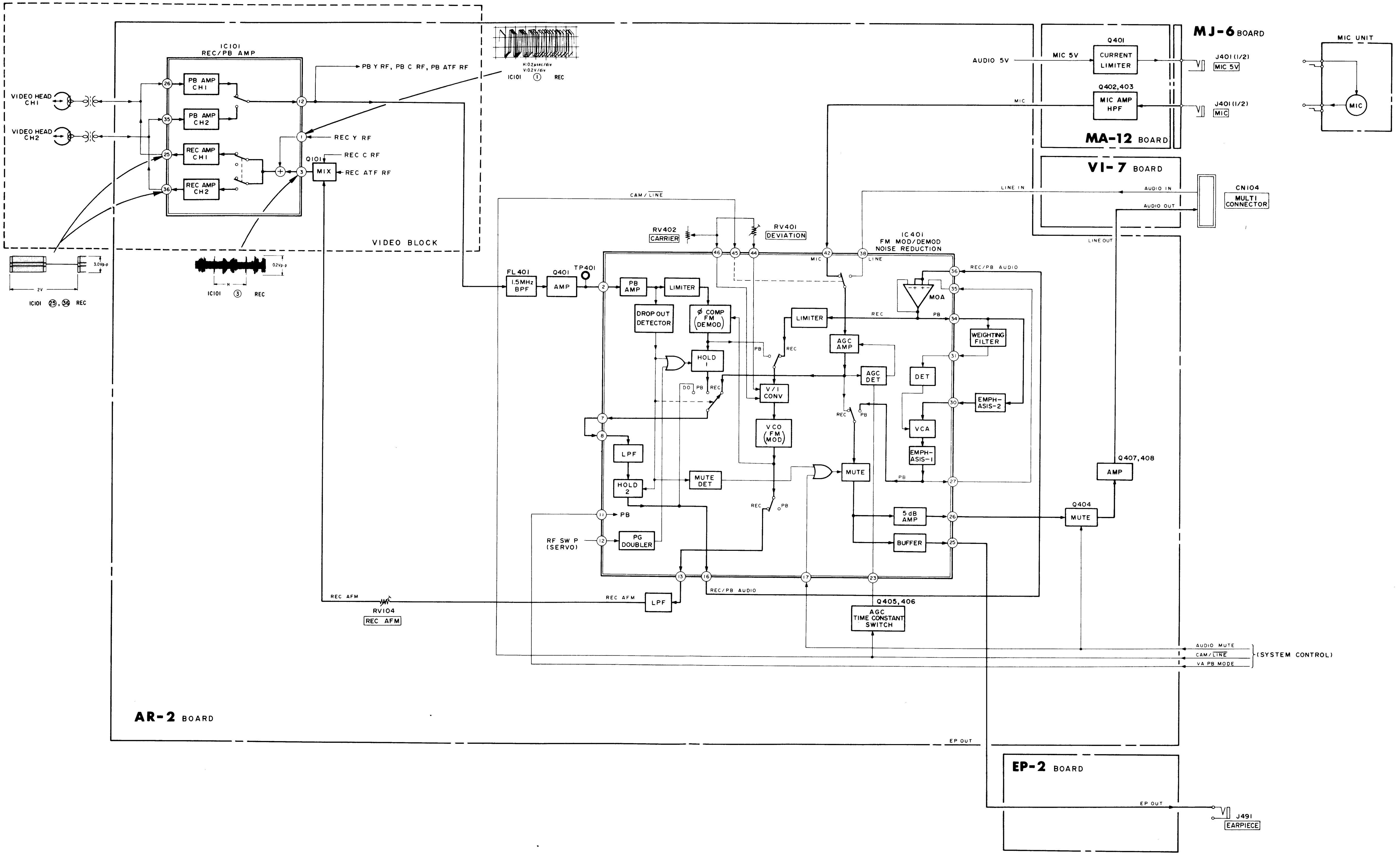
3-4. VIDEO SYSTEM BLOCK DIAGRAM


AR-2 BOARD
VI-7 BOARD (VIDEO)
EX-1 BOARD (1/3)
DRUM
VIDEO HEAD CH1
ROTARY TRANSFORMER
VIDEO HEAD CH2
DUMPING
CH1 HEAD AMP
CH1 2ND AMP
CH2 HEAD AMP
CH2 2ND AMP
RV102 CH1 PB EQ
RV106 CH2 PB EQ
RF CH1
RF CH2
TP104
IC101 REC/PB AMP
BUFFER
AMP
AFM 885MHz TRAP
LV101 PB Y TRAP
Q106 BUFFER
CHROMA RF TRAP
Q104, Q105, D101 SOFT LIMITER
ACK JOG
PB AFM
REC AFM
(AUDIO)
CH1 REC AMP
CH2 REC AMP
V-I CONV
TP102
TP103
Y VOL
C VOL
Q101 MIX
RV101 REC Y
RV104 REC AFM
RV103 REC ATF
RV105 REC C
Q102
Q103 MP/ME SWITCH
MP/ME (VI-7 BOARD IC107)
BOTH REC CONT (SERVO)
RF SW P (SERVO)
R/P PB MODE (SYSTEM CONTROL)
REC Y RF
REC C RF
REC ATF RF
PB Y RF
PB C RF
IC101 ⑮, ⑯ PB
IC101 ⑬ PB
IC101 ㊼ REC/PB
IC101 ㉔, ㊲ REC
IC101 ㊻ (TPI04) REC
IC101 ㊵ PB
IC101 ㊲ REC/PB
IC101 ㉓ REC/PB
IC101 ㉑ REC
IC101 ⑯ PB/E-E
IC102 ② REC/PB
IC102 ㉟ PB
IC102 ㉞
IC101 ⑫ PB
Q365-368 TUNING EXPANDER
RV105 DEVIATION
RV106 PB LEVEL
VA PB MODE
REC/PB SWITCH
Q102-Q104 (IC107)
Q109 PB 5V (Q123)
SUB DE-EMPH
SUB PRE-EMPH
MAIN PRE-EMPHASIS
HALF H SHIFT
FM MOD
RV103 CARRIER
IC101 Y PROCESS
RF SW P (SERVO)
MAIN DE-EMPHASIS
PB LEVEL
CLAMP
AGC DET
REC Y TRAP
Q101 BUFFER
RV104 AC CLIP
RV102 AGC
CAM/LINE (IC107)
AGC AMP
CLAMP VD ADD
VIDEO OUT LEVEL
RV101 VIDEO OUT
DOC DET
SYNC SEP
CLAMP PULSE
RF AGC
LIMITER
FM DEMOD
LPF
LINE VIDEO IN
LINE VIDEO
CAMERA VIDEO
PB/EE VIDEO
COMP SYNC
AGC P (IC105)
JOG VD (IC105, SERVO)
DROP OUT (IC102)
PB 5V (Q123)
D361 LIMITER
Q362 TRAP
Q361 BUFFER
DEMOD OUT
RETURN VIDEO
PB/EE CHROMA
BF2 (IC105)
IC102 COMB FILTER
LV103 CP
DL101 2H DELAY
Q113
RV107 CD
IC102 CX20031
RV108 YD
AGC DET
AM DET
AM MOD
DROP OUT
NORMAL
CLAMP
DL102 1H DELAY
X103
Q114
CORRELATION DET
NON CORR
CORR
AGC OUT
PB CAROMA
REC/PB CHROMA
PB CHROMA
REC/PB CHROMA
REC C RF
TP109
RETURN VIDEO
CAMERA VIDEO
CAMERA REC
TALLY
(CAMERA)
IC107 SERIAL IN PARALLEL OUT
SCK BUS
SO BUS
VA S/P CS
SYSTEM RESET
(SYSTEM CONTROL)
CLK
DATA
STB
RESET
SP/LP
JOG
MP/ME
VA PB MODE
CAM/LINE
CAM REC
TALLY
VIDEO MUTE
AUDIO MUTE
SYS RESET
SYSTEM CONTROL BLOCK
(SERVO)
REC ATF
PB ATF
(AUDIO)
AUDIO MUTE
TP127
Q122, Q123 PB 5V SWITCH
IC102 ㊷ REC
IC103 ⑯ REC
IC104 ㊱ REC/PB
(5.17MHz)
IC103 CHROMA EMPHASIS
LIMTER
4.43MHz TRAP
FL102
ATT
VA PB MODE (IC107)
IC103 ⑯ PB
IC103 ① REC
IC103 ⑫ PB
IC103 ① PB
REC CHROMA
PB C RF
FL104 BPF
RV109 CARRIER BALANCE
RV111 VCO
IC104 CHROMA PROCESS
CARRIER INVERT
CARRIER CONV.
375fH VCO
APC ID
AFC
5.9MHz
CHROMA CONV.
LPF ACK
BURST EMPH/DE EMPH
APC DET
APC DET SW&AMP
ACK DET
ACK
4.43MHz XTAL OSC
CV101 FSC
X101
90° SHIFT
SV4.43MHz
BF3
BF1 (IC105)
ACC AMP
ACC DET
PEAK HOLD
CHROMA INVERT
REC C TRAP
LV102
Q126 BUFFER
FL103 PEC C BPF
JOG (IC107)
RF SW P (SERVO)
PB 5V (Q123)
FL105 3.7MHz BPF
FL106 5.17MHz BPF
Q127 AMP
BPF
(4.43MHz)
IC104 ⑰ PB
IC104 ㉒ PB
IC104 ㊵ REC
IC104 ⑥ REC/PB
IC104 ⑳, ㉑ REC/PB
IC108 ⑯ REC/PB
H: 0.1μsec/div
V: 0.2V/div


IC101 ㊻ (TP104) REC
IC101 ㊵ PB
IC101 ㊲ REC/PB
IC101 ㉓ REC/PB
IC101 ㉑ REC
H: 0.1μsec/div
V: 0.2V/div
IC101 ⑯ PB/E-E
IC102 ② REC/PB
IC102 ㉟ PB
IC102 ㉞ REC
IC102 ㉒ PB
IC102 ㉔ REC
IC102 ⑱ REC/PB
IC105 ㉝ REC/PB
IC101 ㊼ REC/PB
LINE VIDEO IN
REC/PB Y
PB Y
REC Y RF
AGC OUT
EX-1 BOARD (1/3)
Q365-368
TUNING EXPANDER
RV105 DEVIATION
RV106 PB LEVEL
VA PB MODE PB 5V
Q102-Q104 (IC107) (Q123)
Q109
REC/PB SWITCH
VA PB MODE (IC107)
RV103 CARRIER
IC101 Y PROCESS
SUB DE-EMPH
SUB PRE-EMPH
MAIN PRE-EMPHASIS
HALF H SHIFT
FM MOD
RF SW P (SERVO)
REC Y TRAP
Q101 BUFFER
MAIN DE-EMPHASIS
PB LEVEL
CLAMP
AGC DET
RV104
AC CLIP
RV102 AGC
VA PB MODE (IC107)
CAM/LINE (IC107)
LINE VIDEO
CAMERA VIDEO
AGC AMP
CLAMP VD ADD
VIDEO OUT LEVEL
RV101 VIDEO OUT
PB/EE VIDEO
TP104
LPF
SYNC SEP
CLAMP PULSE
RF AGC
DOC DET
LIMITER
FM DEMOD
COMP SYNC
AGC P (IC105)
JOG VD (IC105, SERVO)
PB/EE CHROMA
DROP OUT (IC102)
PB 5V (Q123)
IC101 ⑫ PB
EX-1 BOARD (1/3)
D361 Q362 Q361
LIMITER TRAP BUFFER LPF
DEMOD OUT
PB/EE CHROMA
RETURN VIDEO
PB Y RF
PB C RF
RV104 REC AFM
REC C RF
RV103 REC ATF
REC ATF RF
MP/ME (VI-7 BOARD IC107)
AGC OUT
PB CAROMA
BF2 (IC105)
IC102 COMB FILTER
VA PB MODE (IC107)
LV103 CP
DL101 2H DELAY
Q113
RV107 CD
VA PB MODE (IC107)
REC/PB CHROMA
CORR
NON CORR
B/W
COLOR
CORRELATION DET
RV108 YD
LPF
AGC DET
AM DET
IC102 CX20031
DROP OUT
NORMAL
LIMITER
AGC
AM MOD
CLAMP
CLAMP
DL102 1H DELAY
X103
Q114
VA PB MODE (IC107)
JOG (IC107)
DROP OUT (IC101)
REC ON
PB ON
EX-1 BOARD (1/3)
Q363,364
LPF EQ
ACK (IC104)
REC/PB Y
TP121
TP108
CN104 MULTI CONNECTOR
LINE VIDEO IN
LINE VIDEO OUT
IC105 ③ REC
IC101 ② REC
IC105 ①, ⑮ REC/PB
IC105 AFC, PULSE GENERATOR
JOG (IC107)
VIDEO MUTE (IC107)
ACK (IC104)
V SEP
REF V (SERVO)
RF SW P (SERVO)
HALF H KILLER
SYNTHESIS GATE
COMP SYNC (IC101)
VA PB MODE
SYS RESET
(IC107)
VARIABLE DIVIDER
DELAY PULSE GENERATOR
AFC AFC ID
1/8 PHASE SHIFT
375fH
AGC P
BF 2
BF 1
IC105 ㊾ REC
IC105 ㊾ PB
IC105 ㊻ REC
IC105 ㊻ PB
IC105 ㊹ REC/PB
(732KHz)
IC105 ㉟ REC/PB
IC105 ㉜ (TP128) REC/PB
(5.9MHz)
IC105 ㊲ REC/PB
IC105 ㊷ REC
IC105 ㊶ REC
(13.3 MHz)
IC102 ④ REC/PB
IC102 ㊷ PB
JOG VD
JOG VD (SERVO)
REC C RF
PB CHROMA
REC/PB CHROMA
IC102 ㊷ REC
IC103 ⑯ REC
(5.17MHz)
IC104 ㊱ REC/PB
TP127
Q122,Q123
PB 5V SWITCH
PB 5V
ARALLEL OUT
SP/LP
JOG
MP/ME
PB MODE
AM/LINE
EAM REC
TALLY
PB MODE
EO MUTE
BIO MUTE
S RESET
L BLOCK
IC103 CHROMA EMPHASIS
PB CHROMA
REC/PB CHROMA
LIMTER
4.43MHz TRAP
FL102
ATT
VA PB MODE (IC107)
IC103 ⑯ PB
IC103 ① REC
IC103 ⑫ PB
IC103 ① PB
REC CHROMA
FL104 BPF
RV109 CARRIER BALANCE
Q126 BUFFER
REC C TRAP
LV102
LPF
RV111 VCO
CARRIER INVERT
CARRIER CONV.
375fH VCO
APC ID
AFC
IC104 CHROMA PROCESS
CHROMA CONV
BURST EMPH/DE EMPH
APC DET
APC DET SW&AMP
ACK DET
ACK
4.43MHz X'TALOSC
90° SHIFT
CV101 FSC
X101
LPF ACK
BF 3
LPF BF 1 (IC105)
ACC AMP
ACC DET
PEAK HOLD
CHROMA INVERT
JOG (IC107)
RF SW P (SERVO)
PB5V (Q123)
SV 4.43MHz
FL103 PEC C BPF
PB CHROMA
PB C RF
BPF
Q127 AMP
(4.43MHz)
IC104 ⑰ PB
IC104 ㊵ REC
IC104 ⑥ REC/PB
IC104 ⑳㉑ REC/PB
IC108 ⑯ REC/PB
FL105 3.7MHz BPF
FL106 5.17MHz BPF
IC108 JOG CHROMA PROCESS
6dB
APC CORRECTION
GCA
SV 4.43 MHz (IC104)
PHASE SHIFT
MAIN SWITCH
QUASI BURST
RV113 GCA
1/2FH
BURST ID DET
SEQUENCE DET
SWICH CONTROL
IIL LOGIC
CLF GENERATOR
D103
VA PB MODE
JOG
(IC107)
BF 3 (IC104)
S/H
LPF
FH VCO
RV112 FH
(4.43MHz)
IC108 ㉓ REC
IC108 ㉓ PB
IC108 ⑱ REC/PB
IC104 ㉒ PB
IC104 ㉒ E-E
IC108 ⑤ REC/PB
IC108 ⑮ REC/PB
IC108 ⑫ REC/PB
0.58Vp-p
0.8Vp-p
0.56Vp-p
1.25Vp-p
2.2Vp-p
0.45Vp-p
0.15Vp-p
0.6Vp-p
0.6Vp-p
0.6Vp-p
1.1Vp-p
4.8Vp-p
0.52Vp-p
0.7Vp-p
2.6Vp-p
4.8Vp-p
0.34Vp-p
0.3Vp-p
5Vp-p
5Vp-p
5Vp-p
4.9Vp-p
4Vp-p
0.28Vp-p
5Vp-p
0.38Vp-p
0.12Vp-p
0.44Vp-p
0.11Vp-p
0.18Vp-p
0.32Vp-p
0.42Vp-p
0.26Vp-p
1Vp-p
0.48Vp-p
0.42Vp-p
0.23Vp-p
0.1Vp-p
0.26Vp-p
0.21Vp-p
0.2Vp-p
4Vp-p
0.56Vp-p
4Vp-p
3.2Vp-p
4Vp-p
H
V
2V

DEO)

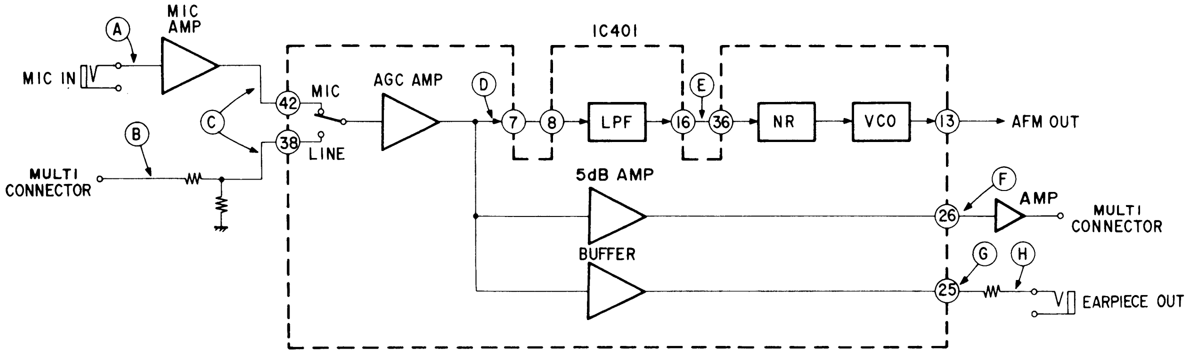
3-5. VIDEO/AUDIO BLOCK DIAGRAM

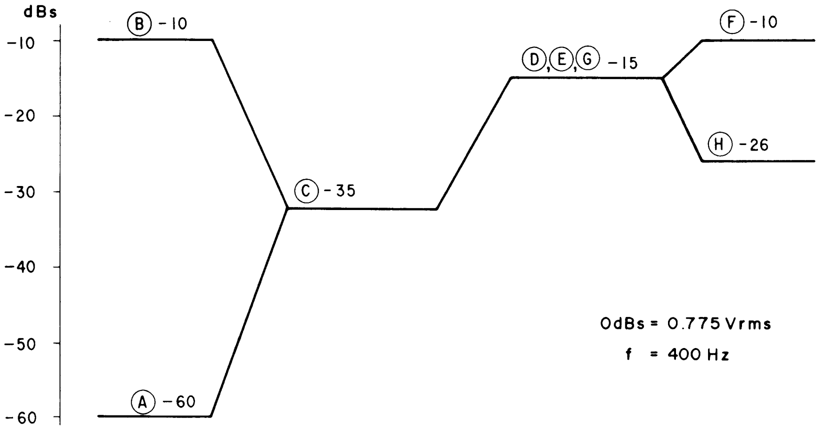

IC101
REC/PB AMP
PB AMP CH1
PB AMP CH2
REC AMP CH1
REC AMP CH2
VIDEO HEAD CH1
VIDEO HEAD CH2
PB Y RF, PB C RF, PB ATF RF
REC Y RF
REC C RF
REC ATF RF
Q101
MIX
H:0.2 μsec/div
V:0.2 V/div
IC101 ① REC
VIDEO BLOCK
3.0Vp-p
2V
IC101 ㉕, ㊱ REC
0.2Vp-p
H
IC101 ③ REC
CAM/LINE
RV402
CARRIER
RV401
DEVIATION
IC401
FM MOD/DEMOD
NOISE REDUCTION
FL401
1.5MHz BPF
Q401
AMP
TP401
PB AMP
LIMITER
DROP OUT DETECTOR
φ COMP FM (DEMOD)
HOLD 1
DO
PB
REC
V/I CONV
VCO (FM MOD)
LPF
HOLD 2
MUTE DET
PB
RF SW P (SERVO)
PG DOUBLER
LIMITER
AGC AMP
AGC DET
DET
MOA
WEIGHTING FILTER
EMPH-ASIS-2
VCA
EMPH-ASIS-1
MUTE
5dB AMP
BUFFER
MIC
LINE
REC/PB AUDIO
REC AFM
RV104
REC AFM
LPF
Q405,406
AGC TIME CONSTANT SWITCH
AUDIO 5V
MIC 5V
Q401
CURRENT LIMITER
Q402,403
MIC AMP HPF
MJ-6 BOARD
MA-12 BOARD
J401 (1/2)
MIC 5V
J401 (1/2)
MIC
MIC UNIT
MIC
VI-7 BOARD
LINE IN
AUDIO IN
AUDIO OUT
LINE OUT
CN104
MULTI CONNECTOR
Q407,408
AMP
Q404
MUTE
AUDIO MUTE
CAM/LINE
VA PB MODE
(SYSTEM CONTROL)
AR-2 BOARD
EP OUT
EP-2 BOARD
EP OUT
J491
EARPIECE

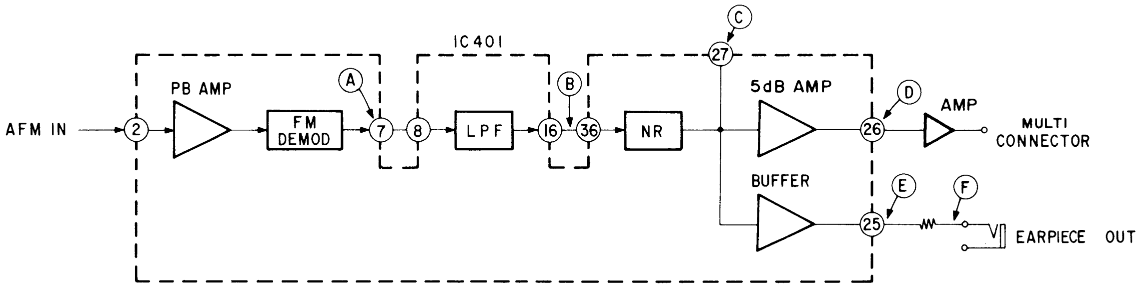
3-6. AUD

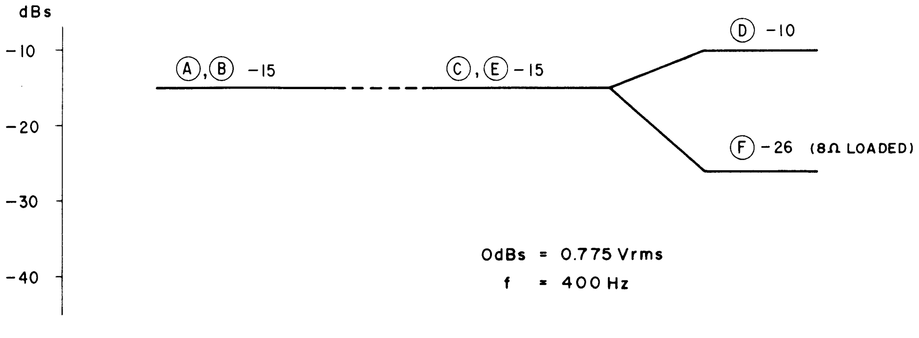
MIC IN
MULTI
CONNECTOR

3-6. AUDIO LEVEL DIAGRAM

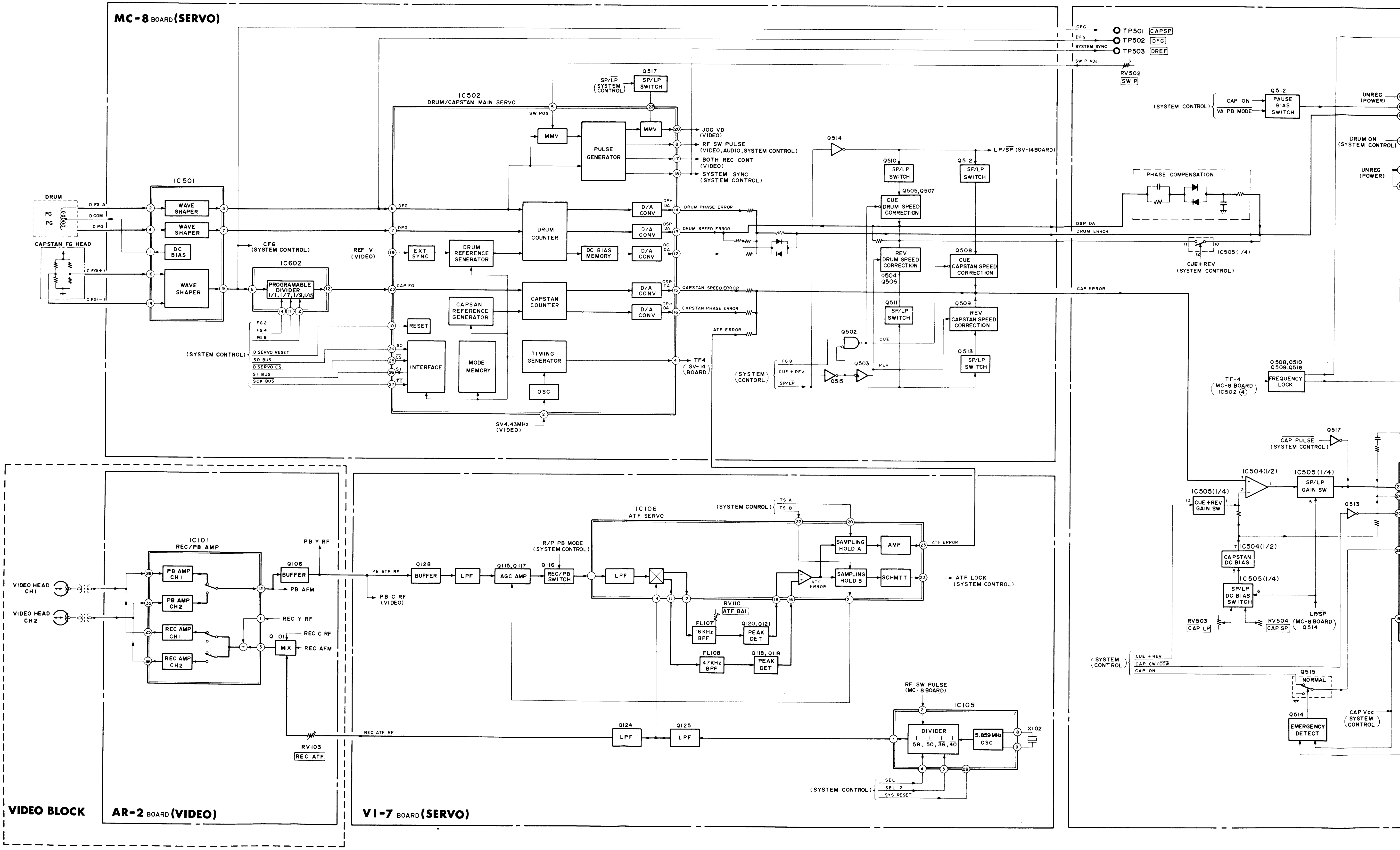

MIC IN
MIC AMP
A
B
C
MULTI CONNECTOR
IC401
42
38
MIC
LINE
AGC AMP
D
7
8
LPF
16
E
36
NR
VCO
13
AFM OUT
5dB AMP
BUFFER
F
26
AMP
MULTI CONNECTOR
G
H
25
EARPIECE OUT

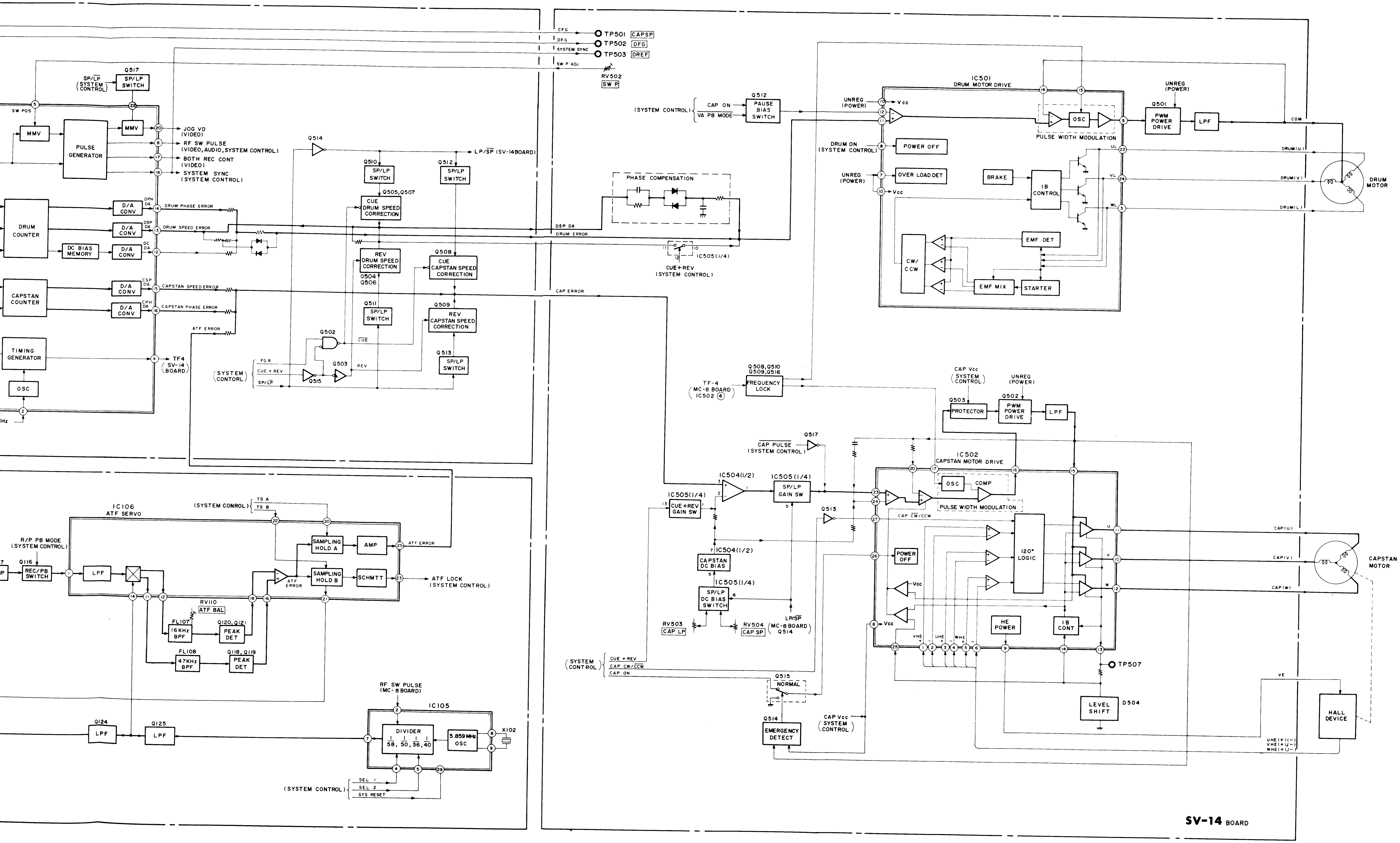



AFM IN
2
PB AMP
FM DEMOD
A
7
8
IC401
LPF
16
B
36
NR
C
27
5dB AMP
D
26
AMP
MULTI CONNECTOR
BUFFER
E
25
F
EARPIECE OUT

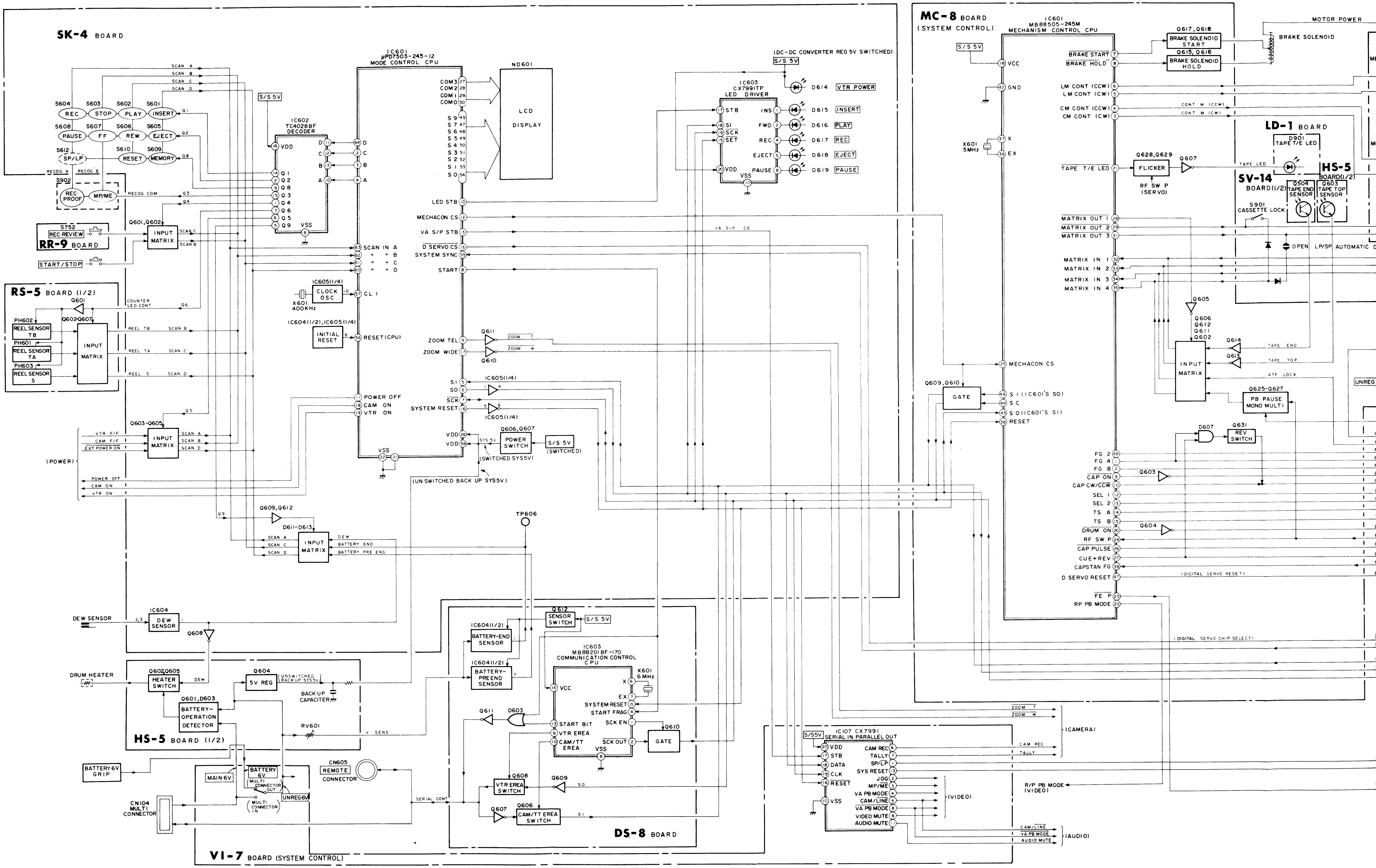


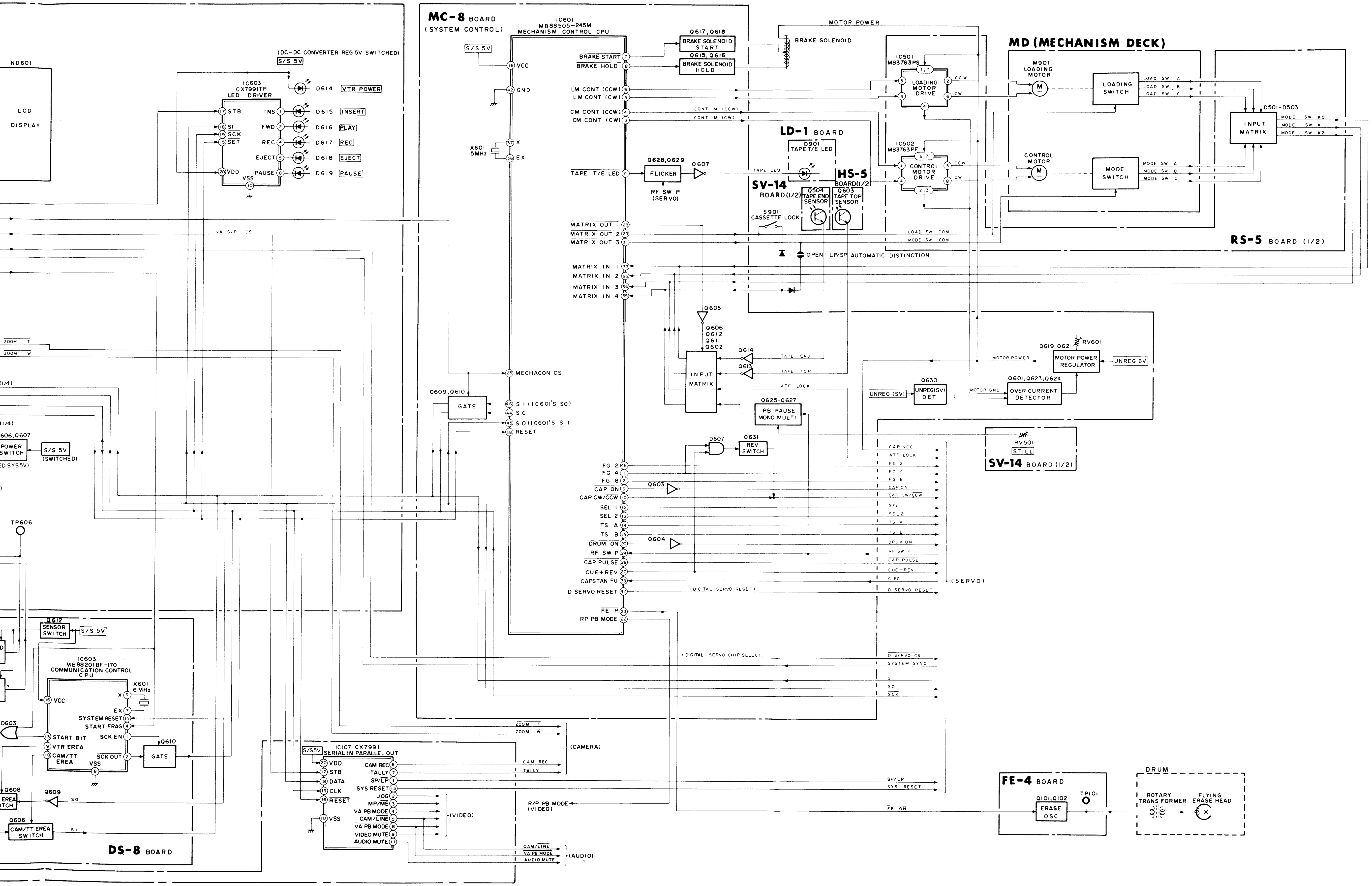
3-7. SERVO BLOCK DIAGRAM


MC-8 BOARD (SERVO)
DRUM
FG
PG
D FG A
D COM
D PG
CAPSTAN FG HEAD
C FG(+)
C FG(-)
IC501
WAVE SHAPER
WAVE SHAPER
DC BIAS
WAVE SHAPER
CFG (SYSTEM CONTROL)
IC602
PROGRAMABLE DIVIDER 1/1, 1/7, 1/9, 1/15
FG 2
FG 4
FG 8
(SYSTEM CONTROL)
D SERVO RESET
SO BUS
D SERVO CS
SI BUS
SCK BUS
REF V (VIDEO)
IC502
DRUM/CAPSTAN MAIN SERVO
SW POS
MMV
PULSE GENERATOR
MMV
EXT SYNC
DRUM REFERENCE GENERATOR
DRUM COUNTER
DC BIAS MEMORY
D/A CONV
D/A CONV
D/A CONV
CAPSAN REFERENCE GENERATOR
CAPSTAN COUNTER
D/A CONV
D/A CONV
RESET
INTERFACE
MODE MEMORY
TIMING GENERATOR
OSC
SV4.43MHz (VIDEO)
SP/LP (SYSTEM CONTROL)
Q517
SP/LP SWITCH
JOG VD (VIDEO)
RF SW PULSE (VIDEO, AUDIO, SYSTEM CONTROL)
BOTH REC CONT (VIDEO)
SYSTEM SYNC (SYSTEM CONTROL)
DRUM PHASE ERROR
DRUM SPEED ERROR
CAPSTAN SPEED ERROR
CAPSTAN PHASE ERROR
ATF ERROR
TF4 (SV-14 BOARD)
CFG
DFG
SYSTEM SYNC
SW P ADJ
TP501 CAPSP
TP502 DFG
TP503 DREF
RV502 SW P
Q514
LP/SP (SV-14 BOARD)
Q510 SP/LP SWITCH
Q512 SP/LP SWITCH
Q505, Q507
CUE DRUM SPEED CORRECTION
REV DRUM SPEED CORRECTION
Q504 Q506
Q508 CUE CAPSTAN SPEED CORRECTION
Q509 REV CAPSTAN SPEED CORRECTION
Q511 SP/LP SWITCH
Q513 SP/LP SWITCH
Q502
Q503
Q515
CUE
REV
(SYSTEM CONTORL)
FG 8
CUE + REV
SP/LP
DSP DA
DRUM ERROR
CAP ERROR
PHASE COMPENSATION
IC505(1/4)
CUE+REV (SYSTEM CONTROL)
(SYSTEM CONTROL)
CAP ON
VA PB MODE
Q512 PAUSE BIAS SWITCH
UNREG (POWER)
DRUM ON (SYSTEM CONTROL)
UNREG (POWER)
TF-4 (MC-8 BOARD IC502 ④)
Q508, Q510 Q509, Q516
FREQUENCY LOCK
CAP PULSE (SYSTEM CONTROL)
Q517
IC504(1/2)
IC505(1/4) SP/LP GAIN SW
IC505(1/4) CUE+REV GAIN SW
Q513
IC504(1/2) CAPSTAN DC BIAS
IC505(1/4) SP/LP DC BIAS SWITCH
RV503 CAP LP
RV504 CAP SP
LP/SP (MC-8 BOARD Q514)
(SYSTEM CONTROL)
CUE + REV
CAP CW/CCW
CAP ON
Q515 NORMAL
Q514 EMERGENCY DETECT
CAP Vcc (SYSTEM CONTROL)
VIDEO BLOCK
AR-2 BOARD (VIDEO)
VIDEO HEAD CH1
VIDEO HEAD CH2
IC101 REC/PB AMP
PB AMP CH1
PB AMP CH2
REC AMP CH1
REC AMP CH2
Q106 BUFFER
PB Y RF
PB AFM
REC Y RF
Q101 MIX
REC C RF
REC AFM
RV103 REC ATF
V1-7 BOARD (SERVO)
PB ATF RF
PB C RF (VIDEO)
Q128 BUFFER
LPF
Q115, Q117 AGC AMP
R/P PB MODE (SYSTEM CONTROL)
Q116 REC/PB SWITCH
IC106 ATF SERVO
(SYSTEM CONROL)
TS A
TS B
LPF
RV110 ATF BAL
FL107 16KHz BPF
Q120, Q121 PEAK DET
FL108 47KHz BPF
Q118, Q119 PEAK DET
ATF ERROR
SAMPLING HOLD A
AMP
SAMPLING HOLD B
SCHMTT
ATF ERROR
ATF LOCK (SYSTEM CONTROL)
REC ATF RF
Q124 LPF
Q125 LPF
RF SW PULSE (MC-8 BOARD)
IC105
DIVIDER 58, 50, 36, 40
5.859MHz OSC
X102
(SYSTEM CONTROL)
SEL 1
SEL 2
SYS RESET


TP501 CAPSP
TP502 DFG
TP503 DREF
CFG
DFG
SYSTEM SYNC
SW P ADJ
RV502 SW P
SP/LP (SYSTEM CONTROL)
Q517 SP/LP SWITCH
SW POS
MMV
PULSE GENERATOR
JOG VD (VIDEO)
RF SW PULSE (VIDEO, AUDIO, SYSTEM CONTROL)
BOTH REC CONT (VIDEO)
SYSTEM SYNC (SYSTEM CONTROL)
DRUM COUNTER
DC BIAS MEMORY
D/A CONV
DRUM PHASE ERROR
DRUM SPEED ERROR
CAPSTAN COUNTER
CAPSTAN SPEED ERROR
CAPSTAN PHASE ERROR
ATF ERROR
TIMING GENERATOR
OSC
TF4 (SV-14 BOARD)
Q514
LP/SP (SV-14 BOARD)
Q510 SP/LP SWITCH
Q512 SP/LP SWITCH
Q505, Q507 CUE DRUM SPEED CORRECTION
Q504 Q506 REV DRUM SPEED CORRECTION
Q508 CUE CAPSTAN SPEED CORRECTION
Q511 SP/LP SWITCH
Q509 REV CAPSTAN SPEED CORRECTION
Q513 SP/LP SWITCH
Q502
Q503
Q515
CUE
REV
(SYSTEM CONTORL)
FG B
CUE + REV
SP/LP
PHASE COMPENSATION
DSP DA
DRUM ERROR
IC505 (1/4)
CUE + REV (SYSTEM CONTROL)
CAP ERROR
(SYSTEM CONTROL)
CAP ON
VA PB MODE
Q512 PAUSE BIAS SWITCH
IC501 DRUM MOTOR DRIVE
UNREG (POWER)
Vcc
DRUM ON (SYSTEM CONTROL)
POWER OFF
OVER LOAD DET
BRAKE
IB CONTROL
PULSE WIDTH MODULATION
OSC
Q501 PWM POWER DRIVE
LPF
COM
DRUM(U)
DRUM(V)
DRUM(L)
DRUM MOTOR
CW/CCW
EMF DET
EMF MIX
STARTER
TF-4 (MC-8 BOARD IC502 ④)
Q508, Q510 Q509, Q516 FREQUENCY LOCK
CAP Vcc (SYSTEM CONTROL)
Q503 PROTECTOR
Q502 PWM POWER DRIVE
CAP PULSE (SYSTEM CONTROL)
Q517
IC502 CAPSTAN MOTOR DRIVE
OSC
COMP
PULSE WIDTH MODULATION
IC504 (1/2)
IC505 (1/4) SP/LP GAIN SW
IC505 (1/4) CUE + REV GAIN SW
Q513
CAP CW/CCW
POWER OFF
120° LOGIC
IC504 (1/2) CAPSTAN DC BIAS
IC505 (1/4) SP/LP DC BIAS SWITCH
RV503 CAP LP
RV504 CAP SP
LP/SP (MC-8 BOARD Q514)
HE POWER
IB CONT
VHE
UHE
WHE
TP507
LEVEL SHIFT
D504
CAP(U)
CAP(V)
CAP(W)
CAPSTAN MOTOR
VE
HALL DEVICE
VHE(+)(-)
UHE(+)(-)
WHE(+)(-)
(SYSTEM CONTROL)
CUE + REV
CAP CW/CCW
CAP ON
Q515 NORMAL
Q514 EMERGENCY DETECT
CAP Vcc (SYSTEM CONTROL)
IC106 ATF SERVO
(SYSTEM CONROL)
TS A
TS B
R/P PB MODE (SYSTEM CONTROL)
Q116 REC/PB SWITCH
LPF
SAMPLING HOLD A
AMP
ATF ERROR
SAMPLING HOLD B
SCHMTT
ATF LOCK (SYSTEM CONTROL)
RV110 ATF BAL
FL107 16KHz BPF
Q120, Q121 PEAK DET
FL108 47KHz BPF
Q118, Q119 PEAK DET
RF SW PULSE (MC-8 BOARD)
IC105
DIVIDER 58, 50, 36, 40
5.859MHz OSC
X102
Q124 LPF
Q125 LPF
(SYSTEM CONTROL)
SEL 1
SEL 2
SYS RESET
SV-14 BOARD

3-8. SYSTEM CONTROL BLOCK DIAGRAM


SK-4 BOARD
S604 REC
S603 STOP
S602 PLAY
S601 INSERT
S608 PAUSE
S607 FF
S606 REW
S605 EJECT
S612 SP/LP
S610 RESET
S609 MEMORY
S902 REC PROOF
MP/ME
RECOG A
RECOG B
RECOG COM
SCAN A
SCAN B
SCAN C
SCAN D
IC602 TC4028BF DECODER
IC601 μPD7503-245-12 MODE CONTROL CPU
ND601 LCD DISPLAY
COM3
COM2
COM1
COM0
LED STB
MECHACON CS
VA S/P STB
D SERVO CS
SYSTEM SYNC
START
SCAN IN A
IC605(1/4) CLOCK OSC
X601 400KHz
CL I
IC604(1/2),IC605(1/4) INITIAL RESET
RESET(CPU)
ZOOM TEL
ZOOM WIDE
Q611
Q610
POWER OFF
CAM ON
VTR ON
SYSTEM RESET
Q606,Q607 POWER SWITCH
S/S 5V (SWITCHED)
(SWITCHED SYS5V)
(UNSWITCHED BACK UP SYS5V)
S752 REC REVIEW
RR-9 BOARD
START/STOP
Q601,Q602 INPUT MATRIX
RS-5 BOARD (1/2)
PH602 REEL SENSOR TB
PH601 REEL SENSOR TA
PH603 REEL SENSOR S
COUNTER LED CONT
Q603-Q605 INPUT MATRIX
VTR F/F
CAM F/F
EXT POWER ON
(POWER)
Q609,Q612
D611-D613 INPUT MATRIX
DEW
BATTERY END
BATTERY PRE END
TP606
DEW SENSOR
IC604 DEW SENSOR
Q608
DRUM HEATER
Q602,Q605 HEATER SWITCH
Q604 5V REG
(UNSWITCHED BACKUP SYS5V)
BACK UP CAPACITER
Q601,D603 BATTERY-OPERATION DETECTOR
RV601
V SENS
HS-5 BOARD (1/2)
BATTERY 6V GRIP
MAIN 6V
BATTERY 6V
MULTI CONNECTOR OUT
MULTI CONNECTOR IN
UNREG 6V
CN104 MULTI CONNECTOR
CN605 REMOTE CONNECTOR
SERIAL CONT
VI-7 BOARD (SYSTEM CONTROL)
Q612 SENSOR SWITCH
IC604(1/2) BATTERY-END SENSOR
IC604(1/2) BATTERY-PREEND SENSOR
IC603 MB88201BF-170 COMMUNICATION CONTROL CPU
X601 6MHz
START BIT
VTR EREA
CAM/TT EREA
SCK EN
SCK OUT
Q610 GATE
Q611
D603
Q608 VTR EREA SWITCH
Q609
Q607
Q606 CAM/TT EREA SWITCH
DS-8 BOARD
(DC-DC CONVERTER REG 5V SWITCHED)
IC603 CX7991TP LED DRIVER
D614 VTR POWER
D615 INSERT
D616 PLAY
D617 REC
D618 EJECT
D619 PAUSE
MC-8 BOARD (SYSTEM CONTROL)
IC601 MB88505-245M MECHANISM CONTROL CPU
X601 5MHz
BRAKE START
BRAKE HOLD
Q617,Q618 BRAKE SOLENOID START
Q615,Q616 BRAKE SOLENOID HOLD
BRAKE SOLENOID
MOTOR POWER
LM CONT (CCW)
LM CONT (CW)
CM CONT (CCW)
CM CONT (CW)
TAPE T/E LED
Q628,Q629 FLICKER
RF SW P (SERVO)
Q607
LD-1 BOARD
D901 TAPE T/E LED
SV-14 BOARD(1/2)
HS-5 BOARD(1/2)
Q504 TAPE END SENSOR
Q603 TAPE TOP SENSOR
S901 CASSETTE LOCK
OPEN
LP/SP AUTOMATIC
MATRIX OUT 1
MATRIX OUT 2
MATRIX OUT 3
MATRIX IN 1
MATRIX IN 2
MATRIX IN 3
MATRIX IN 4
Q605
Q606 Q612 Q611 Q602 INPUT MATRIX
Q614 TAPE END
Q613 TAPE TOP
ATF LOCK
Q625-Q627 PB PAUSE MONO MULTI
UNREG
D607
Q631 REV SWITCH
MECHACON CS
Q609,Q610 GATE
SI (IC601'S SO)
SC
SO (IC601'S SI)
RESET
FG 2
FG 4
FG 8
CAP ON
CAP CW/CCW
Q603
SEL 1
SEL 2
TS A
TS B
DRUM ON
Q604
RF SW P
CAP PULSE
CUE+REV
CAPSTAN FG
D SERVO RESET
(DIGITAL SERVO RESET)
FE P
RP PB MODE
(DIGITAL SERVO CHIP SELECT)
ZOOM T
ZOOM W
(CAMERA)
IC107 CX7991 SERIAL IN PARALLEL OUT
STB
DATA
CLK
CAM REC
TALLY
SP/LP
SYS RESET
JOG
MP/ME
VA PB MODE
CAM/LINE
VA PB MODE
VIDEO MUTE
AUDIO MUTE
(VIDEO)
R/P PB MODE (VIDEO)
(AUDIO)



MC-8 BOARD
(SYSTEM CONTROL)
IC601
MB88505-245M
MECHANISM CONTROL CPU
S/S 5V
VCC
GND
X601
5MHz
X
EX
BRAKE START
BRAKE HOLD
Q617,Q618
BRAKE SOLENOID START
Q615,Q616
BRAKE SOLENOID HOLD
BRAKE SOLENOID
MOTOR POWER
LM CONT (CCW)
LM CONT (CW)
CM CONT (CCW)
CM CONT (CW)
CONT M (CCW)
CONT M (CW)
TAPE T/E LED
Q628,Q629
FLICKER
RF SW P
(SERVO)
Q607
TAPE LED
LD-1 BOARD
D901
TAPE T/E LED
SV-14
BOARD(1/2)
Q504
TAPE END SENSOR
HS-5
BOARD(1/2)
Q603
TAPE TOP SENSOR
S901
CASSETTE LOCK
OPEN
LP/SP AUTOMATIC DISTINCTION
MATRIX OUT 1
MATRIX OUT 2
MATRIX OUT 3
MATRIX IN 1
MATRIX IN 2
MATRIX IN 3
MATRIX IN 4
Q605
Q606
Q612
Q611
Q602
Q614
Q613
TAPE END
TAPE TOP
ATF LOCK
INPUT MATRIX
Q625-Q627
PB PAUSE MONO MULTI
MECHACON CS
Q609,Q610
GATE
SI (IC601'S SO)
SC
SO (IC601'S SI)
RESET
D607
Q631
REV SWITCH
FG 2
FG 4
FG 8
CAP ON
Q603
CAP CW/CCW
SEL 1
SEL 2
TS A
TS B
DRUM ON
Q604
RF SW P
CAP PULSE
CUE+REV
CAPSTAN FG
D SERVO RESET
(DIGITAL SERVO RESET)
FE P
RP PB MODE
CAP VCC
ATF LOCK
FG 2
FG 4
FG 8
CAP ON
CAP CW/CCW
SEL 1
SEL 2
TS A
TS B
DRUM ON
RF SW P
CAP PULSE
CUE+REV
C FG
D SERVO RESET
(SERVO)
(DIGITAL SERVO CHIP SELECT)
D SERVO CS
SYSTEM SYNC
SI
SO
SCK
IC501
MB3763PS
LOADING MOTOR DRIVE
IC502
MB3763PF
CONTROL MOTOR DRIVE
CCW
CW
MD (MECHANISM DECK)
M901
LOADING MOTOR
CONTROL MOTOR
LOADING SWITCH
MODE SWITCH
LOAD SW A
LOAD SW B
LOAD SW C
MODE SW A
MODE SW B
MODE SW C
D501-D503
INPUT MATRIX
MODE SW K0
MODE SW K1
MODE SW K2
LOAD SW COM
MODE SW COM
RS-5 BOARD (1/2)
Q619-Q621
RV601
MOTOR POWER REGULATOR
UNREG 6V
MOTOR POWER
Q630
UNREG (SV)
UNREG(SV) DET
MOTOR GND
Q601,Q623,Q624
OVER CURRENT DETECTOR
RV501
STILL
SV-14 BOARD (1/2)
ND601
LCD DISPLAY
(DC-DC CONVERTER REG 5V SWITCHED)
S/S 5V
IC603
CX7991TP
LED DRIVER
STB
SI
SCK
SET
VDD
VSS
INS
FWD
REC
EJECT
PAUSE
D614 VTR POWER
D615 INSERT
D616 PLAY
D617 REC
D618 EJECT
D619 PAUSE
VA S/P CS
ZOOM T
ZOOM W
(1/4)
(1/4)
606,Q607
POWER SWITCH
S/S 5V
(SWITCHED)
ED SYS5V)
TP606
Q612
SENSOR SWITCH
S/S 5V
IC603
MB88201BF-170
COMMUNICATION CONTROL CPU
X601
6MHz
VCC
X
EX
SYSTEM RESET
START FRAG
SCK EN
START BIT
VTR EREA
CAM/TT EREA
SCK OUT
VSS
Q610
GATE
D603
Q608
EREA
TCH
Q609
SO
Q606
CAM/TT EREA SWITCH
SI
DS-8 BOARD
ZOOM T
ZOOM W
(CAMERA)
S/S5V
IC107 CX7991
SERIAL IN PARALLEL OUT
VDD
STB
DATA
CLK
RESET
VSS
CAM REC
TALLY
SP/LP
SYS RESET
JOG
MP/ME
VA PB MODE
CAM/LINE
VA PB MODE
VIDEO MUTE
AUDIO MUTE
CAM REC
TALLY
(VIDEO)
R/P PB MODE
(VIDEO)
SP/LP
SYS RESET
FE ON
CAM/LINE
VA PB MODE
AUDIO MUTE
(AUDIO)
FE-4 BOARD
Q101,Q102
ERASE OSC
TP101
DRUM
ROTARY TRANS FORMER
FLYING ERASE HEAD

3-9. SYSTEM CONTROL – CAMERA, VIDEO AND AUDIO BLOCK INTERFACE

SIGNAL	I/O	REF. NO., PIN NO.	MODE									
			STOP	FF	REW	CUE	RE-VIEW	PB	PB·PAUSE	REC	REC·PAUSE	RE-VERSE
R/P PB MODE	O	MC-8 BOARD IC601 ㉒	H	H	H	H	H	H	H	L	H	H
$\overline{\text{FEP}}$	O	MC-8 BOARD IC601 ㉓	H	H	H	H	H	H	H	L	H	H
ZOOM TEL	O	SK-4 BOARD IC601 ⑨	L	L	L	L	L	L	L	L	L	L
ZOOM WIDE	O	SK-4 BOARD IC601 ⑰	L	L	L	L	L	L	L	L	L	L
SP/$\overline{\text{LP}}$	O	VI-7 BOARD IC107 ①	*5	*5	*5	*5	*5	*2	*5	*1	*1	*2
JOG	O	VI-7 BOARD IC107 ②	L	L	L	H	H	L	H	L	L	H
MP/$\overline{\text{ME}}$	O	VI-7 BOARD IC107 ③	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3
VA PB MODE	O	VI-7 BOARD IC107 ④	L	L	L	H	H	H	H	L	L	H
CAM/$\overline{\text{LINE}}$	O	VI-7 BOARD IC107 ⑤	L*4	L*4	L*4	L*4	L*4	L*4	L*4	L*4	L*4	L*4
CAM REC	O	VI-7 BOARD IC107 ⑥	L*4	L*4	L*4	L	L	L	L	L*4	L*4	L
TALLY	O	VI-7 BOARD IC107 ⑦	L	L	L	L	L	L	L	L*4	L	L
$\overline{\text{VA PB MODE}}$	O	VI-7 BOARD IC107 ⑧	H	H	H	L	L	L	L	H	H	L
VIDEO MUTE	O	VI-7 BOARD IC107 ⑨	L	L	L	L	L	L	L	L	L	L
AUDIO MUTE	O	VI-7 BOARD IC107 ⑪	L	L	L	H	H	L	H	L	L	H

*1. BY SP/LP SELECTOR
*2. BY RECORDED TAPE
*3. BY USING TAPE
*4. "H" WHEN " CAMERA POWER" IS ON
*5. HOLDS THE PREVIOUS LEVEL

3-10. MECHANISM CONTROL CPU – SERVO BLOCK INTERFACE

SIGNAL	I/O	REF. NO., PIN NO.	MODE									
			STOP	FF	REW	CUE	RE-VIEW	PB	PB·PAUSE	REC	REC·PAUSE	RE-VERSE
CAP FG	I	IC601 ㊴										
RF. SW PULSE	I	IC601 ㉔										
MONO MULTI	I	IC601 MATRIX IN 4 ㉟										
ATF LOCK	I	IC601 MATRIX IN 3 ㉞										
$\overline{\text{DRUM ON}}$	O	IC601 ⑳	H	L	L	L	L	L	L	L	L	L
$\overline{\text{CAP ON}}$	O	IC601 ⑨	H	L	L	L	L	L	H	L	H	L
CAP CW/$\overline{\text{CCW}}$	O	IC601 ⑩	L	L	H	L	H	L	L	L	L	H
D SERVO RESET	O	IC601 ㊼	L	L	L	L	L	L	L	L	L	L
$\overline{\text{CAP PULSE}}$	O	IC601 ㉖	L	L	L	L	L	L	L	L	L	L
CUE + REVIEW	O	IC601 ㉗	L	L	L	H	H	L	L	L	L	L
FG2	O	IC601 ㊽	L	H	H	L	H	L	L	L	L	L
FG4	O	IC601 ①	L	L	L	L	H	L	L	L	L	L
FG8	O	IC601 ②	L	H	H	H	L	L	L	L	L	L
SEL1	O	IC601 ⑫										
SEL2	O	IC601 ⑬										
TSA	O	IC601 ⑭										
TSB	O	IC601 ⑮										

3-11. SYSTEM CONTROL – MECHANISM BLOCK INTERFACE

SIGNAL	I/O	REF. NO., PIN NO.	STOP	FF	REW	CUE	REV	PB	PB·PAUSE	REC	REC·PAUSE	RVS
MODE SW *1	I	MC-8 BOARD IC601 MATRIX IN	3	6	6	1	5	1	1	1	1	5
LOAD SW *2	I	MC-8 BOARD IC601 MATRIX IN	3	3	3	3	3	3	3	3	3	3
CASSETTE LOCK SW	I	MC-8 BOARD IC601 MATRIX IN	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
$\overline{\text{TAPE TOP}}$	I	MC-8 BOARD IC601 MATRIX IN	NC	NC	H	H/NC	H	NC	NC	NC	H	H
$\overline{\text{TAPE END}}$	I	MC-8 BOARD IC601 MATRIX IN	H/NC	H	NC	H	H	H	H	H	H	H
REEL TA	I	SK-4 BOARD IC601 MATRIX IN										
REEL TB	I	SK-4 BOARD IC601 MATRIX IN										
REEL S	I	SK-4 BOARD IC601 MATRIX IN										
CM CONT (CW)	O	MC-8 BOARD IC601 ③	L	L	L	L	L	L	L	L	L	L
CM CONT (CCW)	O	MC-8 BOARD IC601 ④	L	L	L	L	L	L	L	L	L	L
LM CONT (CW)	O	MC-8 BOARD IC601 ⑤	L	L	L	L	L	L	L	L	L	L
LM CONT (CCW)	O	MC-8 BOARD IC601 ⑥	L	L	L	L	L	L	L	L	L	L
$\overline{\text{BRAKE START}}$	O	MC-8 BOARD IC601 ⑦	H	H	H	H	H	H	H	H	H	H
$\overline{\text{BRAKE HOLD}}$	O	MC-8 BOARD IC601 ⑧	H	L	L	H	L	H	H	H	H	L
$\overline{\text{TAPE T/E LED}}$	O	MC-8 BOARD IC601 ㉑	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3

*1 REFER TO "MODE SWITCH PATTERN."
*2 REFER TO "LOADING SWITCH PATTERN."
*3 REGULAR PULSE

3-12. MODE SWITCH PATTERN

(↻) CW ← MODE SWITCH ROTATING DIRECTION → CCW (↺)

SWITCH POSITION (MODE)		EJECT		LOAD		FF/ REW		STOP		FWD		RVS	
SWITCH PATTERN	7	4	7	2	7	6	7	3	7	1	7	5	7
MODE SW A	×	○	×	○	×	○	×	×	×	×	×	×	×
MODE SW B	×	○	×	×	×	×	×	×	×	○	×	○	×
MODE SW C	×	×	×	○	×	×	×	○	×	○	×	×	×

○ . . . CLOSE , × . . . OPEN

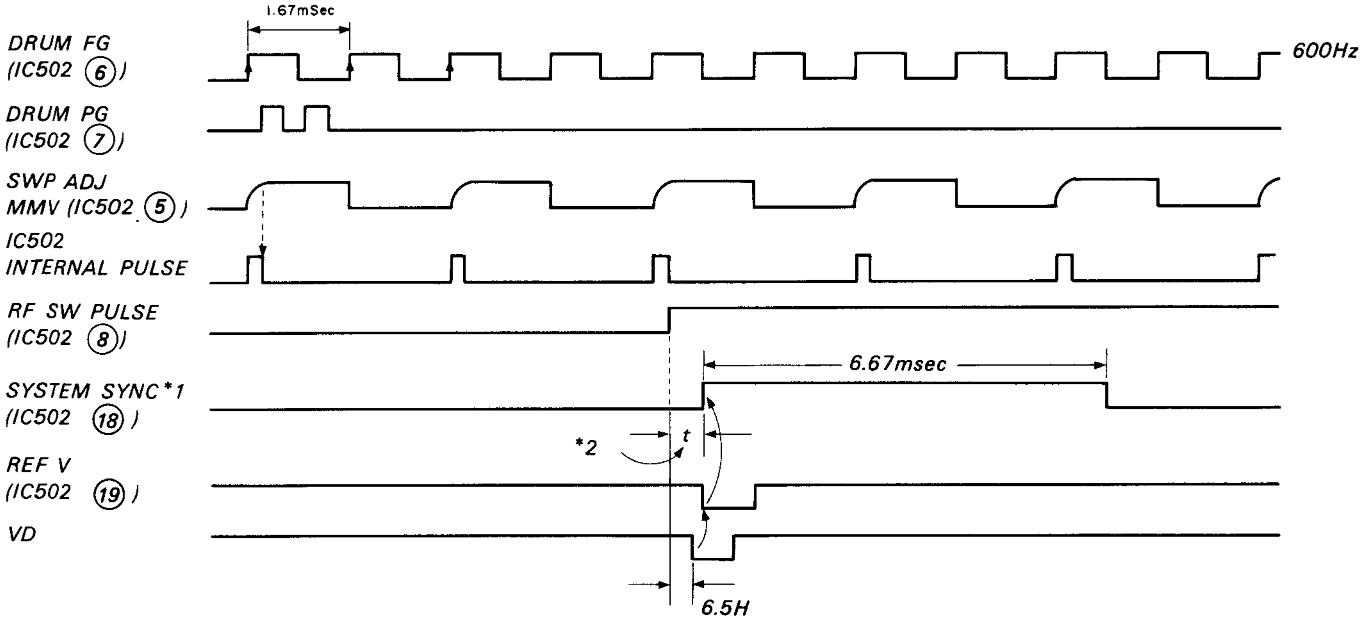
3-13. LOADING SWITCH PATTERN

(↺) CCW ← LOADING SWITCH ROTATING DIRECTION → CW(↻)

SWITCH POSITION	LOADING TOP		UNLOAD WAITE		DRUM START		T REEL START		LOADING END
SWITCH PATTERN	1	7	5	7	4	7	6	7	3
LOAD SW A	×	×	×	×	○	×	○	×	×
LOAD SW B	○	×	○	×	○	×	×	×	×
LOAD SW C	○	×	×	×	×	×	×	×	○

○ . . . CLOSE , × . . . OPEN

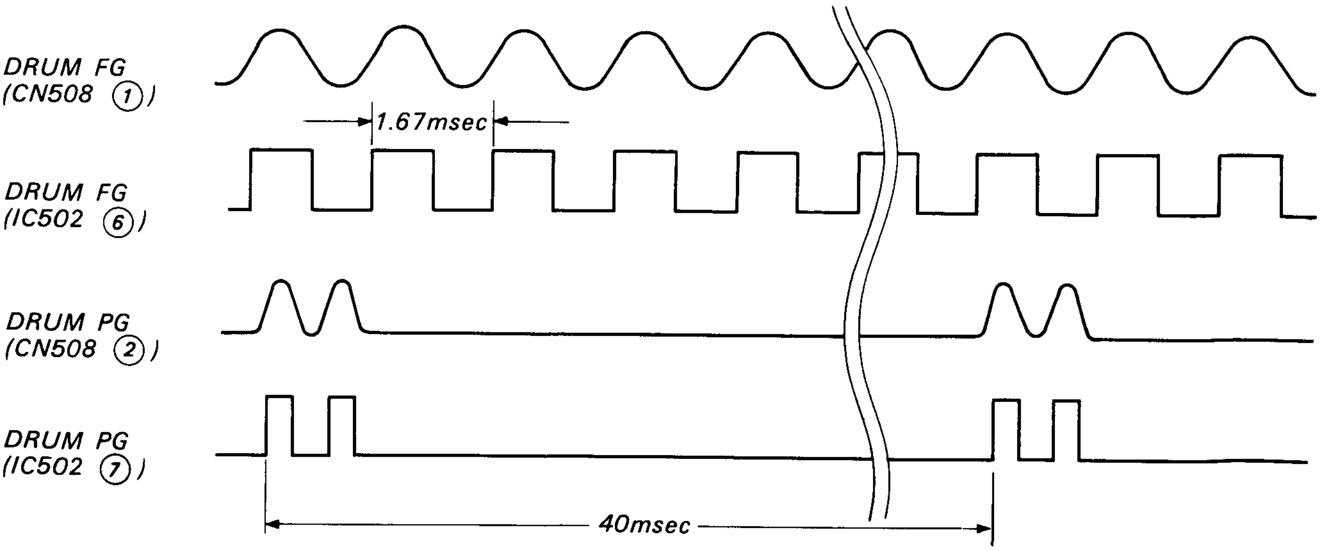
3-14. DRUM PHASE SYSTEM TIMING CHART


1.67mSec
DRUM FG
(IC502 ⑥)
600Hz
DRUM PG
(IC502 ⑦)
SWP ADJ
MMV (IC502 ⑤)
IC502
INTERNAL PULSE
RF SW PULSE
(IC502 ⑧)
6.67msec
SYSTEM SYNC*1
(IC502 ⑱)
*2
t
REF V
(IC502 ⑲)
VD
6.5H

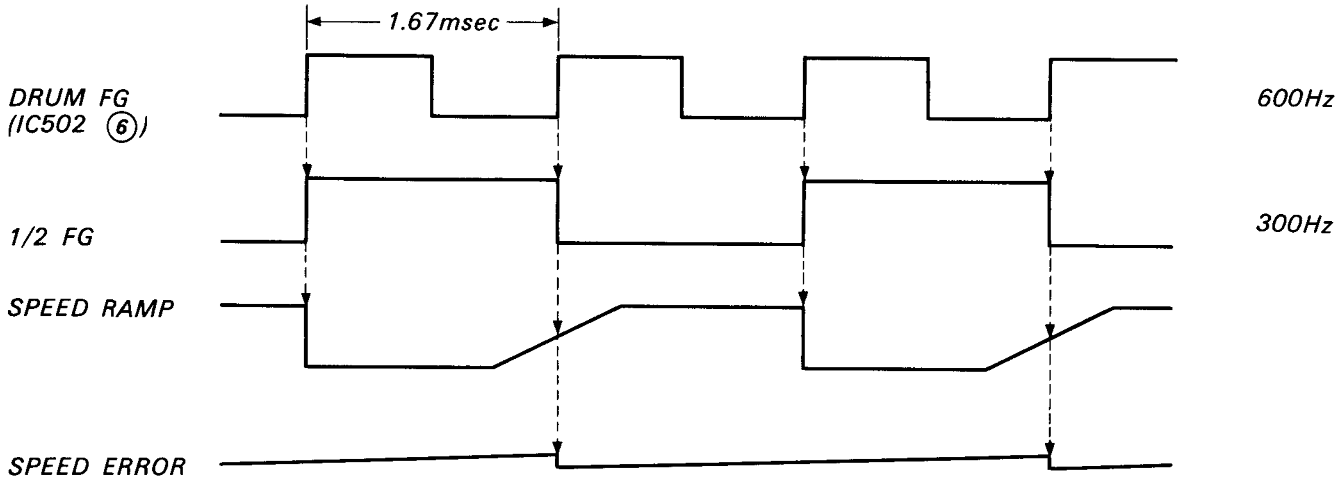
*1: SYSTEM SYNC is a 50 Hz signal generated by counting down the SV4.43 MHz clock signal.
It is used as a reference for drum phase servo control and is synchronizing with the REF V signal fed from the video circuit during recording.

*2: The drum phase servo operation is operating in such a manner that the phase difference between RF SW PULSE and SYSTEM SYNC is approximately equal to 550µs.

3-15. DRUM FG, DRUM PG TIMING CHART


DRUM FG
(CN508 ①)
1.67msec
DRUM FG
(IC502 ⑥)
DRUM PG
(CN508 ②)
DRUM PG
(IC502 ⑦)
40msec

3-16. DRUM SPEED SYSTEM TIMING CHART



3-17. CAPSTAN SERVO OPERATION (MC-8 AND VI-7 BOARDS)

	REC	PB
CSPDA (IC502 ⑮)	CAPSTAN SPEED ERROR	CAPSTAN SPEED ERROR
CPHDA (IC502 ⑯)	CAPSTAN PHASE ERROR	Held at approx. 2.0VDC
ATF ERROR (IC106 ㉕)	Held at approx. 2.5VDC	ATF ERROR

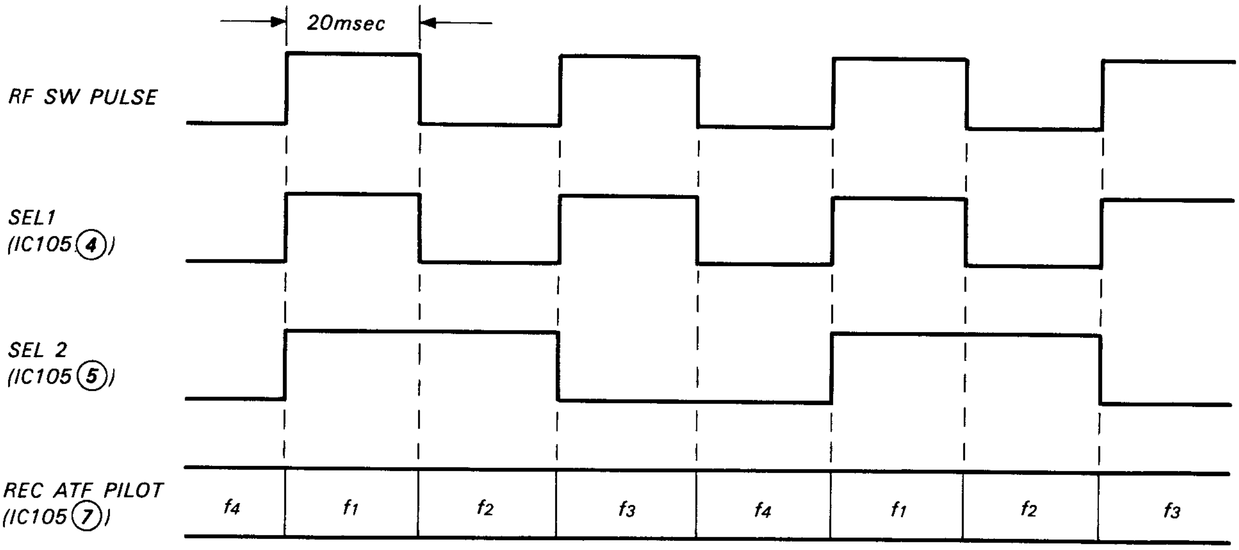
3-18. PROGRAMMABLE FREQUENCY DIVIDER (IC602) OPERATION (MC-8 BOARD)

MODE	SP			LP			FF/REW
SIGNAL	FWD	CUE	REV	FWD	CUE	REV	
CFG (Hz) (IC602 ⑥)	1340	12677	8900	670	6194	4577	
CAPFG (Hz) (IC602 ⑫)	1340	1409	1271	670	688	654	
FG2 (IC602 ⑪)	L	L	H	L	L	H	H
FG4 (IC602 ⑭)	L	L	H	L	L	H	L
FG8 (IC602 ②)	L	H	L	L	H	L	H
$\frac{\text{CFG}}{\text{CAPFG}}$	1/1	1/9	1/7	1/1	1/9	1/7	1/11

3-19. ATF SERVO PILOT SIGNAL (VI-7 BOARD)

PILOT SIGNAL (IC105 ⑦)		CONTROL SIGNAL	
NAME	FREQUENCY	SEL 1 (IC105 ④)	SEL 2 (IC105 ⑤)
f_1	101.024 kHz (375/58 fH)	H	H
f_2	117.188 kHz (375/50 fH)	L	H
f_3	162.760 kHz (375/36 fH)	H	L
f_4	146.484 kHz (375/40 fH)	L	L

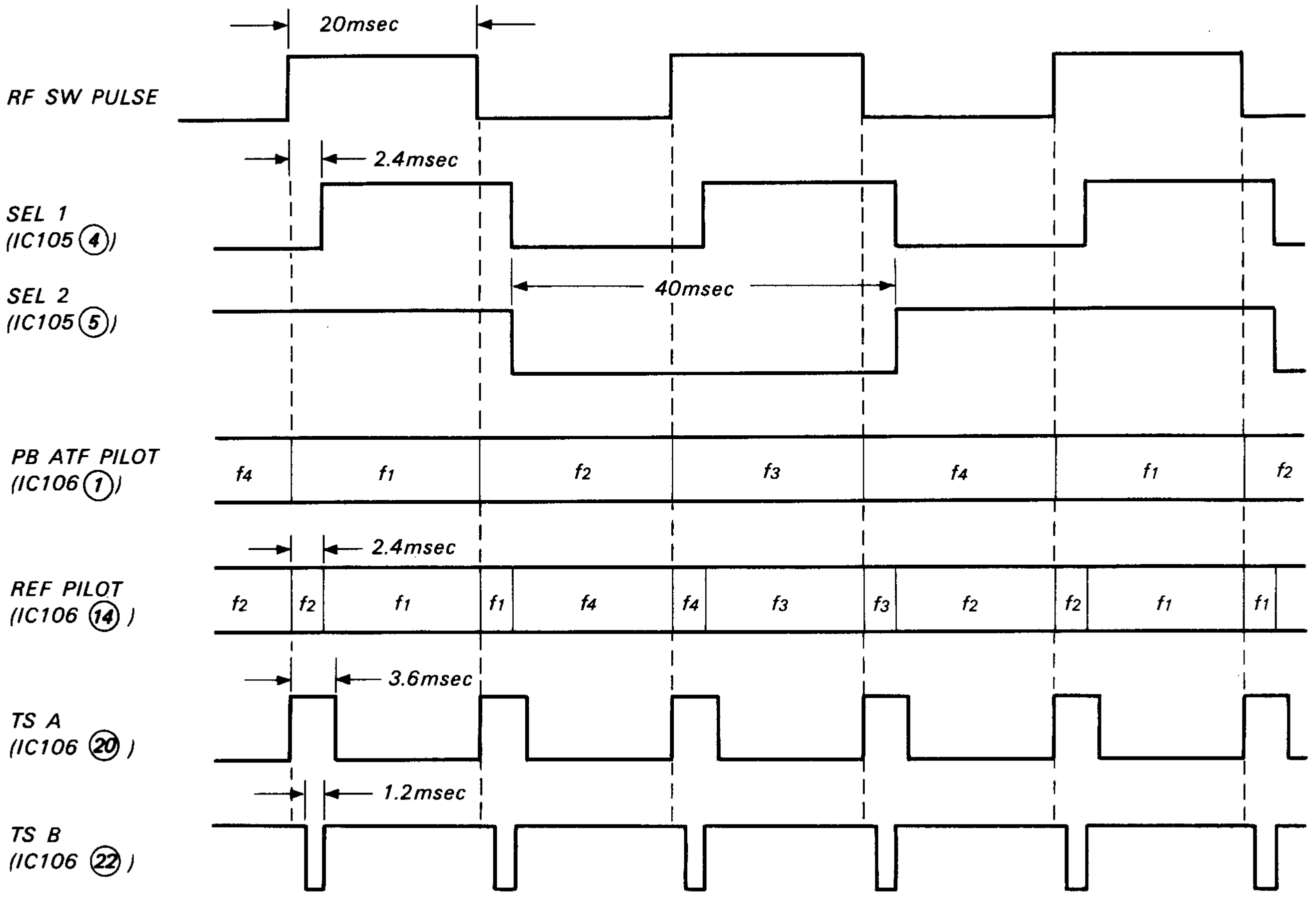
3-20. ATF SERVO TIMING CHART (REC)



20msec
RF SW PULSE
SEL1 (IC105④)
SEL 2 (IC105⑤)
REC ATF PILOT (IC105⑦)
f4
f1
f2
f3
f4
f1
f2
f3

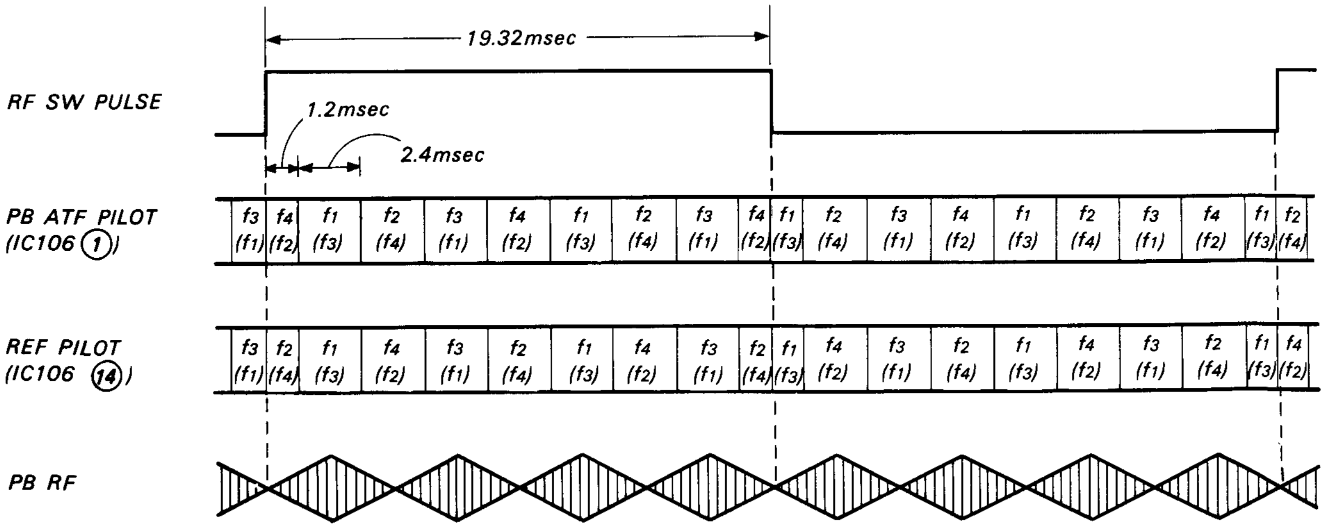
ATF ERROR (IC106 ㉕) is held at approx. 2.5V dc during recording.

3-21. ATF SERVO TIMING CHART (PB)

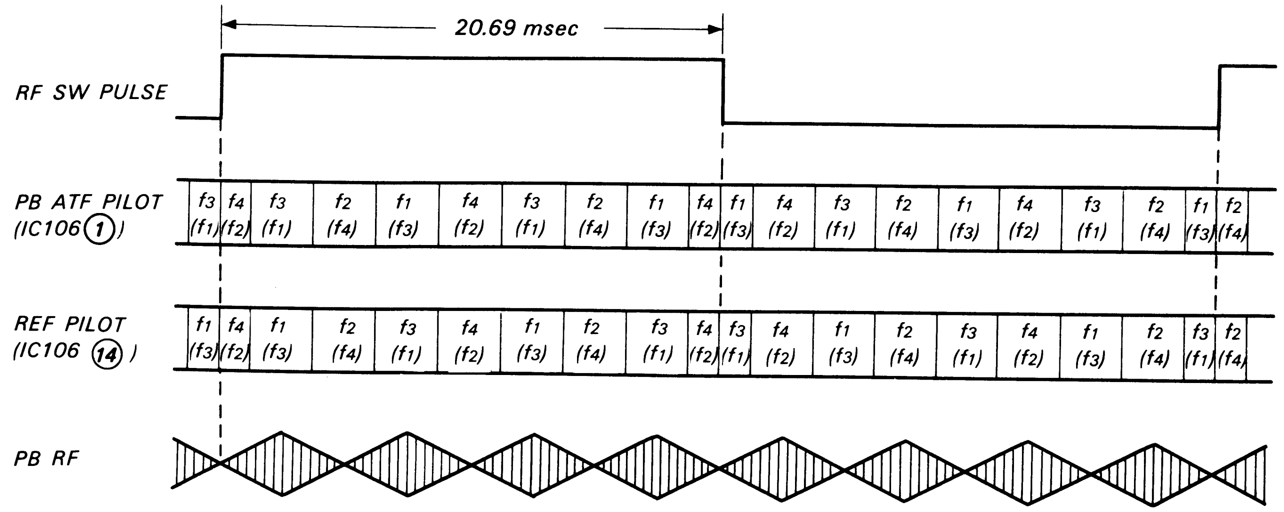

20msec
RF SW PULSE
2.4msec
SEL 1
(IC105 ④)
SEL 2
(IC105 ⑤)
40msec
PB ATF PILOT
(IC106 ①)
f4
f1
f2
f3
f4
f1
f2
2.4msec
REF PILOT
(IC106 ⑭)
f2
f2
f1
f1
f4
f4
f3
f3
f2
f2
f1
f1
3.6msec
TS A
(IC106 ⑳)
1.2msec
TS B
(IC106 ㉒)

When TS A is low, ATF ERROR is detected at pin ㉕ of IC106. When TS B is low, ATF LOCK (phase lock) is detected at pin ㉓ of IC106.

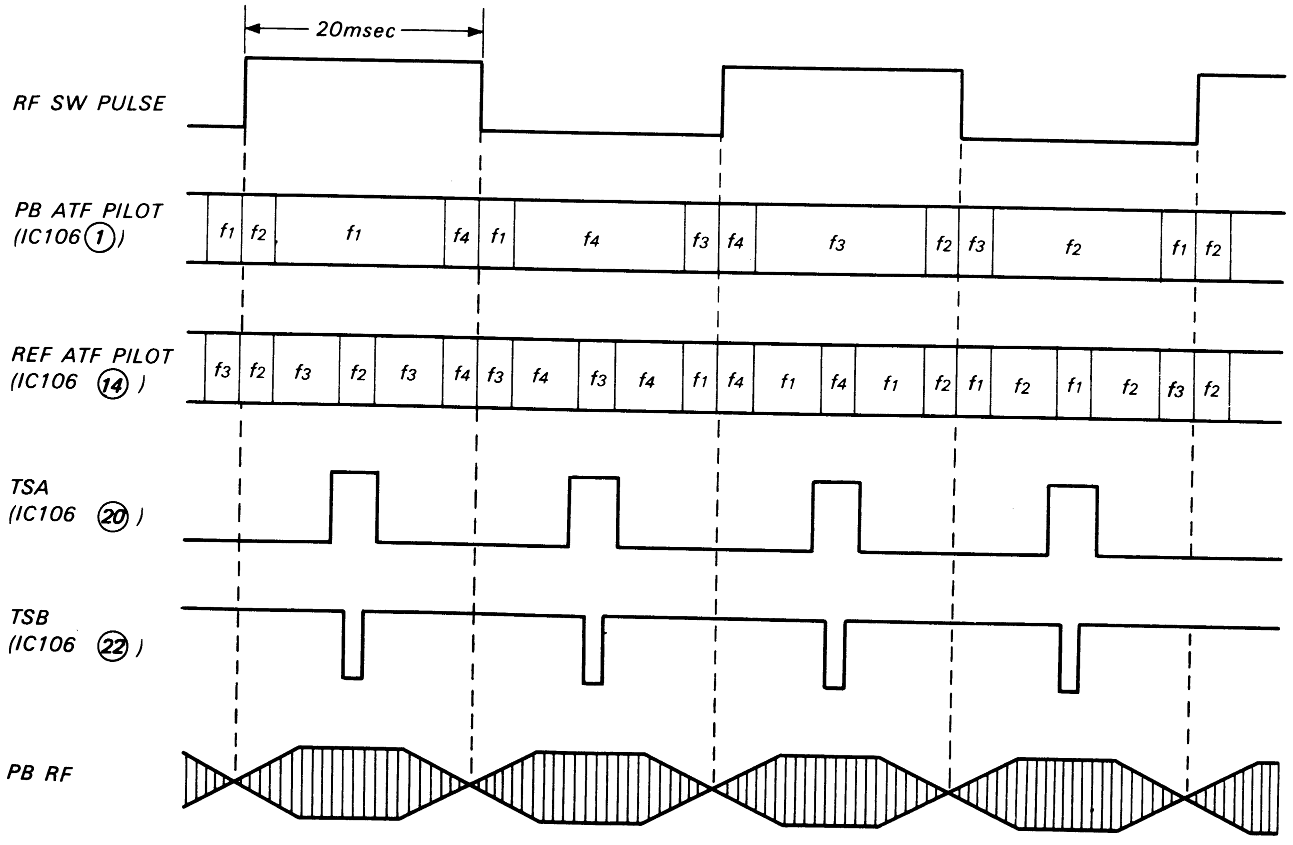
3-22. ATF SERVO TIMING CHART (CUE: x 9)


19.32msec
RF SW PULSE
1.2msec
2.4msec
PB ATF PILOT
(IC106 ①)
f3 (f1)
f4 (f2)
f1 (f3)
f2 (f4)
f3 (f1)
f4 (f2)
f1 (f3)
f2 (f4)
f3 (f1)
f4 (f2)
f1 (f3)
f2 (f4)
f3 (f1)
f4 (f2)
f1 (f3)
f2 (f4)
f3 (f1)
f4 (f2)
f1 (f3)
f2 (f4)
REF PILOT
(IC106 ⑭)
f3 (f1)
f2 (f4)
f1 (f3)
f4 (f2)
f3 (f1)
f2 (f4)
f1 (f3)
f4 (f2)
f3 (f1)
f2 (f4)
f1 (f3)
f4 (f2)
f3 (f1)
f2 (f4)
f1 (f3)
f4 (f2)
f3 (f1)
f2 (f4)
f1 (f3)
f4 (f2)
PB RF

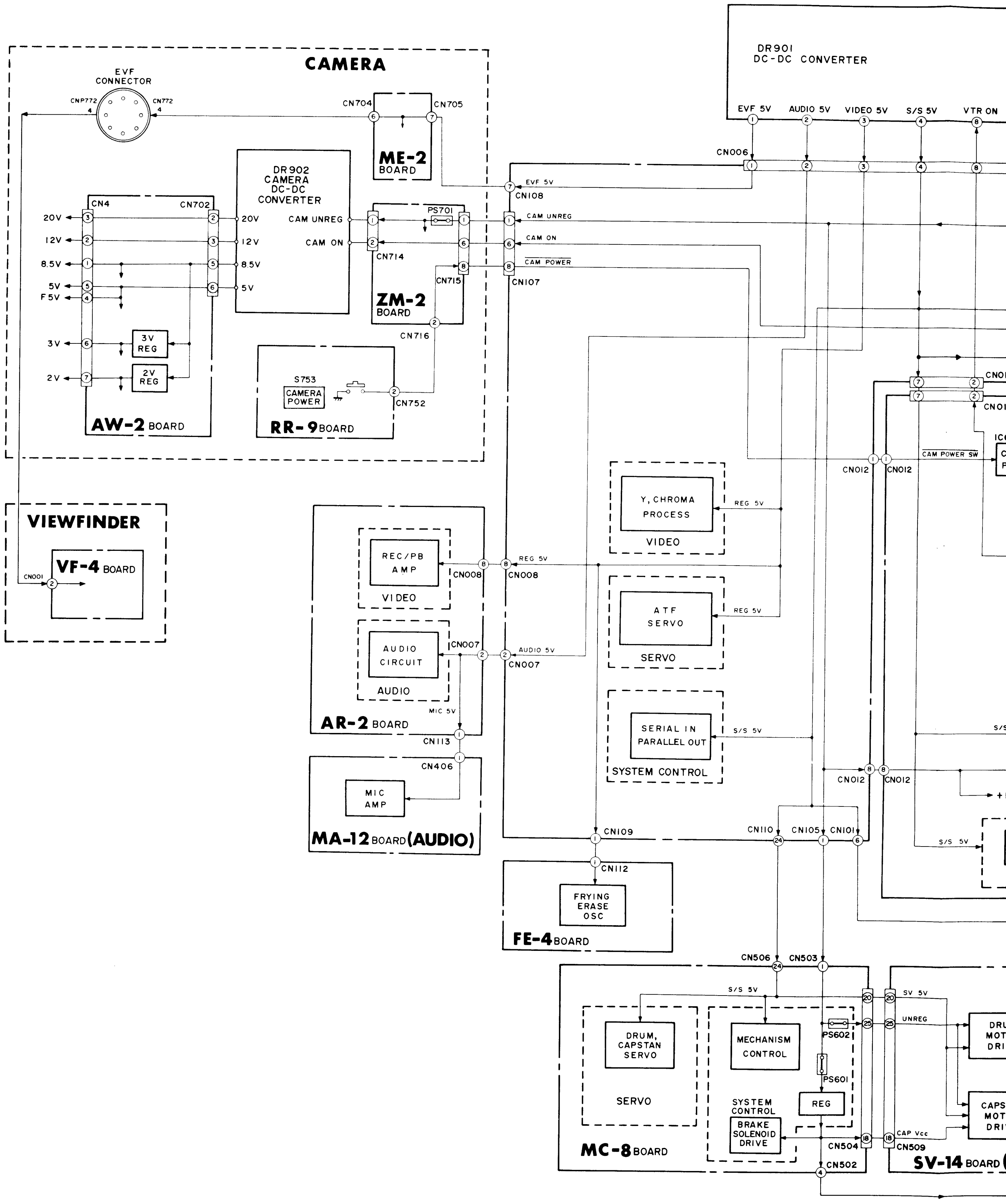
3-23. ATF SERVO TIMING CHART (REVIEW: x –7)


20.69 msec
RF SW PULSE
PB ATF PILOT
(IC106 ①)
f3 f4 f3 f2 f1 f4 f3 f2 f1 f4 f1 f4 f3 f2 f1 f4 f3 f2 f1 f2
(f1) (f2) (f1) (f4) (f3) (f2) (f1) (f4) (f3) (f2) (f3) (f2) (f1) (f4) (f3) (f2) (f1) (f4) (f3) (f4)
REF PILOT
(IC106 ⑭)
f1 f4 f1 f2 f3 f4 f1 f2 f3 f4 f3 f4 f1 f2 f3 f4 f1 f2 f3 f2
(f3) (f2) (f3) (f4) (f1) (f2) (f3) (f4) (f1) (f2) (f1) (f2) (f3) (f4) (f1) (f2) (f3) (f4) (f1) (f4)
PB RF

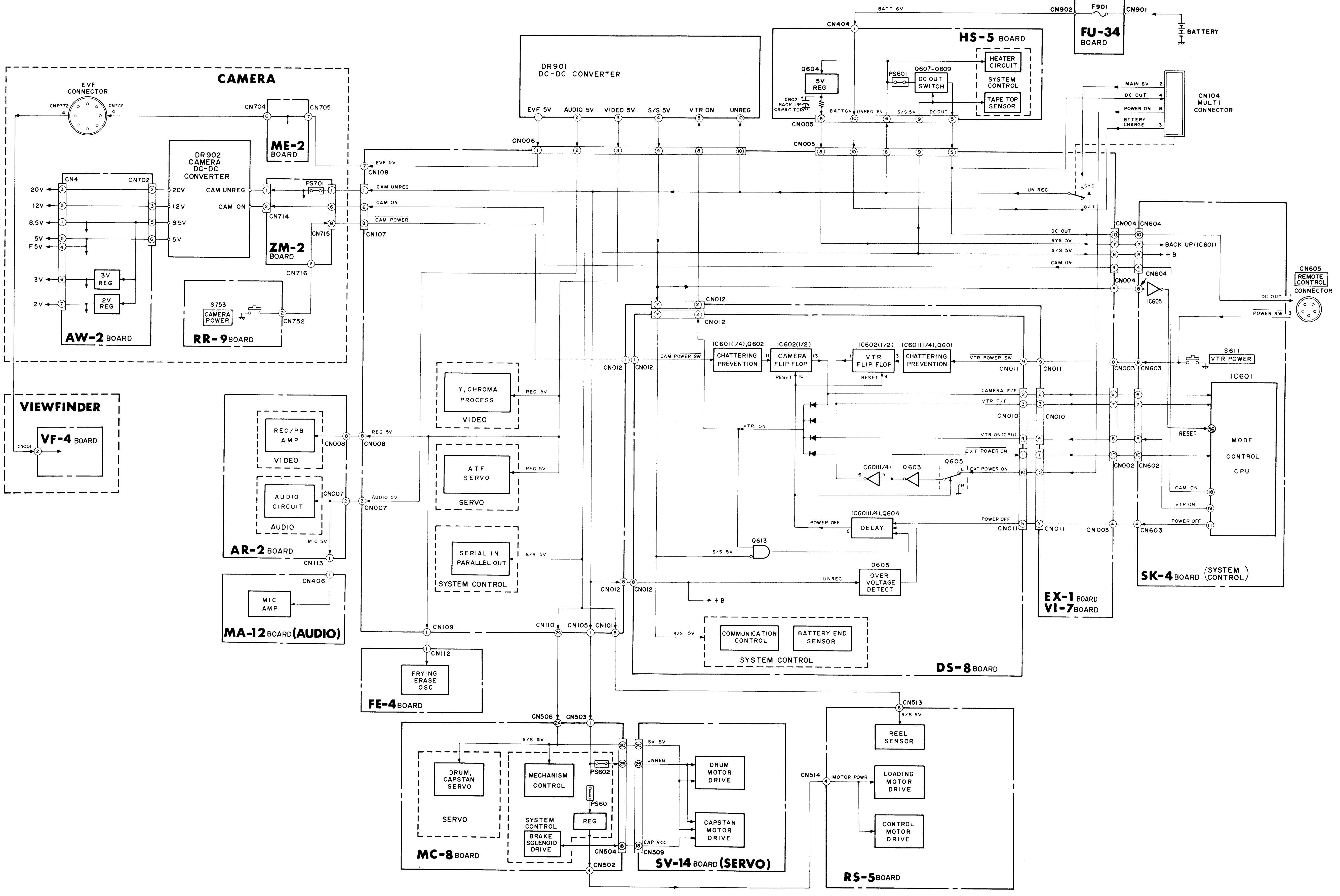
3-24. ATF SERVO TIMING CHART (REVERSE: x –1)


20msec
RF SW PULSE
PB ATF PILOT
(IC106 ①)
f1 f2 f1 f4 f1 f4 f3 f4 f3 f2 f3 f2 f1 f2
REF ATF PILOT
(IC106 ⑭)
f3 f2 f3 f2 f3 f4 f3 f4 f3 f4 f1 f4 f1 f4 f1 f2 f1 f2 f1 f2 f3 f2
TSA
(IC106 ⑳)
TSB
(IC106 ㉒)
PB RF

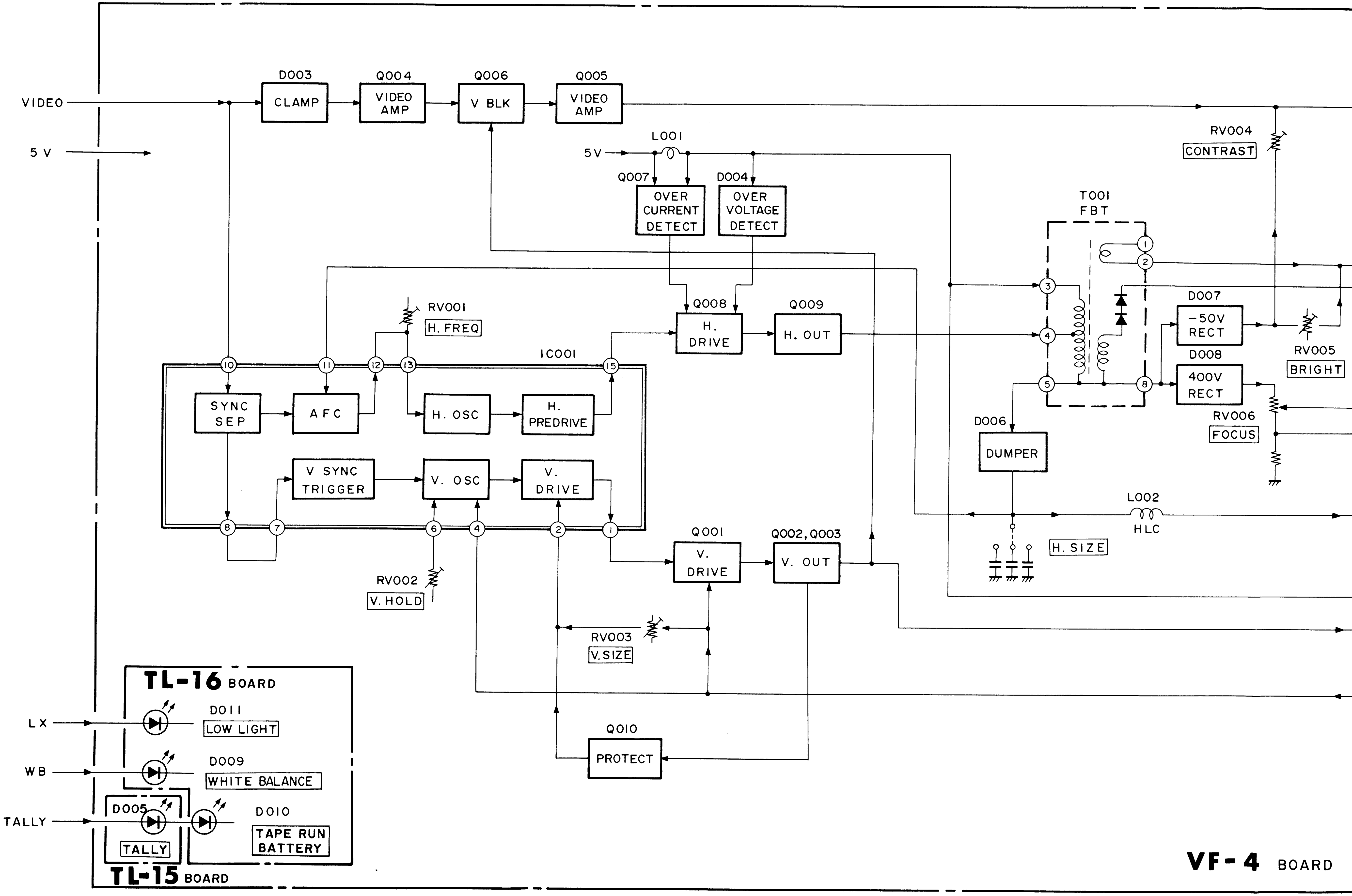
3-25. POWER SUPPLY BLOCK DIAGRAM

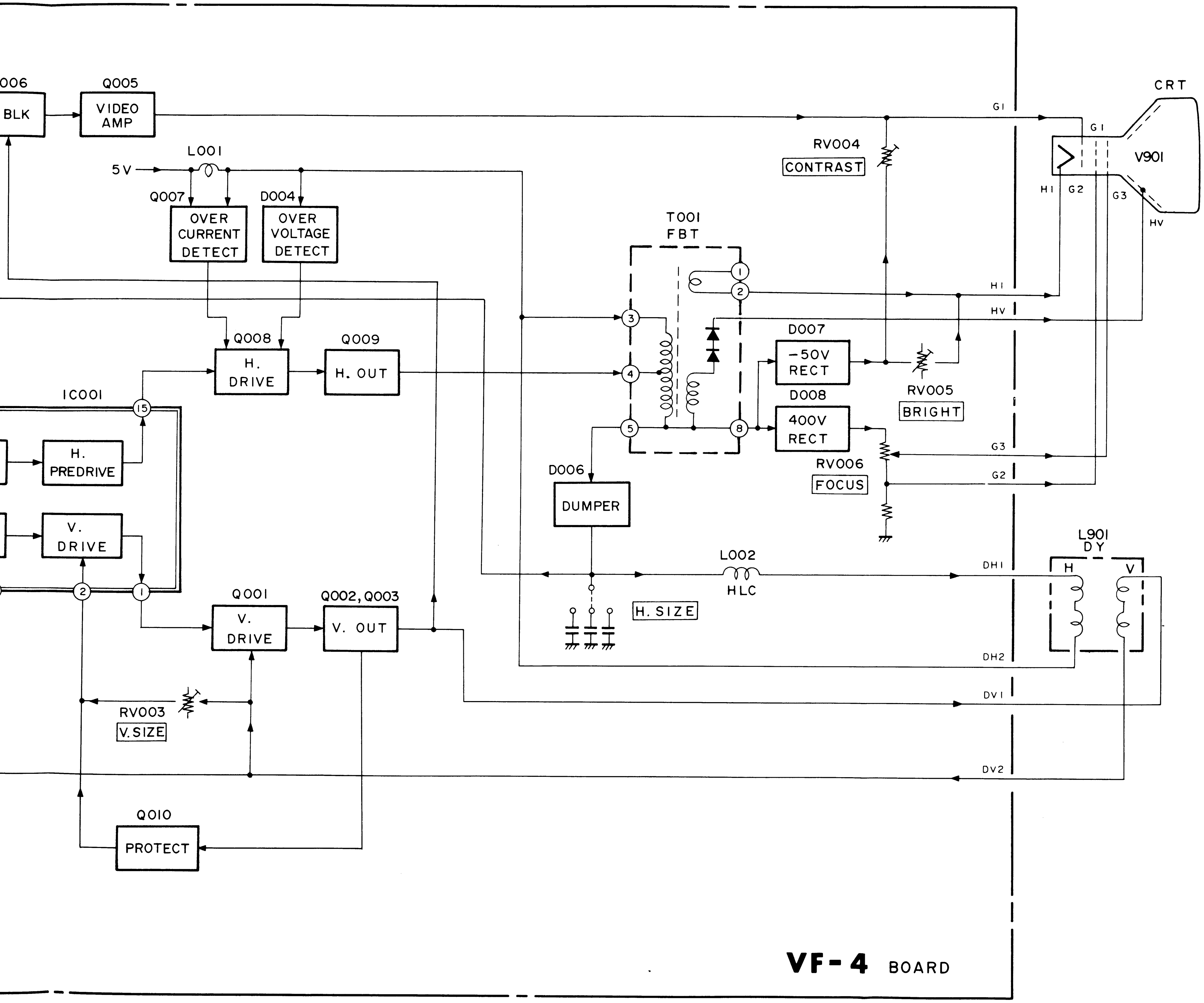

DR901
DC-DC CONVERTER
EVF 5V
AUDIO 5V
VIDEO 5V
S/S 5V
VTR ON
CN006
CAMERA
EVF CONNECTOR
CNP772
CN772
CN704
CN705
ME-2 BOARD
DR902 CAMERA DC-DC CONVERTER
CN4
CN702
20V
12V
8.5V
5V
F5V
3V
2V
3V REG
2V REG
AW-2 BOARD
CAM UNREG
CAM ON
CN714
PS701
CN715
ZM-2 BOARD
CN716
S753
CAMERA POWER
CN752
RR-9 BOARD
EVF 5V
CN108
CAM UNREG
CAM ON
CAM POWER
CN107
VIEWFINDER
CN001
VF-4 BOARD
REC/PB AMP
VIDEO
CN008
REG 5V
AUDIO CIRCUIT
AUDIO
CN007
AUDIO 5V
MIC 5V
AR-2 BOARD
CN113
CN406
MIC AMP
MA-12 BOARD (AUDIO)
Y, CHROMA PROCESS
VIDEO
REG 5V
ATF SERVO
SERVO
REG 5V
SERIAL IN PARALLEL OUT
SYSTEM CONTROL
S/S 5V
CN012
CAM POWER SW
CN109
CN110
CN105
CN101
CN112
FRYING ERASE OSC
FE-4 BOARD
CN506
CN503
S/S 5V
DRUM, CAPSTAN SERVO
SERVO
MECHANISM CONTROL
PS602
PS601
REG
SYSTEM CONTROL
BRAKE SOLENOID DRIVE
CN504
CN502
MC-8 BOARD
SV 5V
UNREG
CAP Vcc
CN509
SV-14 BOARD

3-25. POWER SUPPLY BLOCK DIAGRAM


CAMERA
EVF CONNECTOR
CNP772
CN772
CN704
CN705
ME-2 BOARD
DR902 CAMERA DC-DC CONVERTER
CN4
CN702
20V
12V
8.5V
5V
F5V
3V
2V
3V REG
2V REG
AW-2 BOARD
CAM UNREG
CAM ON
PS701
CN714
CN715
ZM-2 BOARD
CN716
S753
CAMERA POWER
CN752
RR-9 BOARD
VIEWFINDER
VF-4 BOARD
CN001
DR901 DC-DC CONVERTER
EVF 5V
AUDIO 5V
VIDEO 5V
S/S 5V
VTR ON
UNREG
CN006
CN108
CN107
CAM POWER
HS-5 BOARD
CN404
BATT 6V
Q604
5V REG
C602 BACK UP CAPACITOR
PS601
Q607-Q609
DC OUT SWITCH
HEATER CIRCUIT
SYSTEM CONTROL
TAPE TOP SENSOR
CN005
BATT 6V
UNREG 6V
DC OUT
CN902
F901
CN901
FU-34 BOARD
BATTERY
MAIN 6V
POWER ON
BTTERY CHARGE
CN104 MULTI CONNECTOR
UN REG
SYS
BAT
SYS 5V
CN004
CN604
BACK UP (IC601)
+B
CN605 REMOTE CONTROL CONNECTOR
IC605
POWER SW
S611
VTR POWER
Y, CHROMA PROCESS
VIDEO
REG 5V
REC/PB AMP
CN008
AUDIO CIRCUIT
AUDIO
CN007
AR-2 BOARD
MIC 5V
CN113
CN406
MIC AMP
MA-12 BOARD (AUDIO)
ATF SERVO
SERVO
SERIAL IN PARALLEL OUT
SYSTEM CONTROL
CN012
IC601(1/4),Q602
CHATTERING PREVENTION
IC602(1/2)
CAMERA FLIP FLOP
IC602(1/2)
VTR FLIP FLOP
IC601(1/4),Q601
CHATTERING PREVENTION
CAM POWER SW
VTR POWER SW
RESET
CN011
CN003
CN603
IC601
MODE CONTROL CPU
CAMERA F/F
VTR F/F
CN010
VTR ON (CPU)
EXT POWER ON
IC601(1/4)
Q603
Q605
CN002
CN602
CAM ON
VTR ON
POWER OFF
IC601(1/4),Q604
DELAY
Q613
D605
OVER VOLTAGE DETECT
EX-1 BOARD
VI-7 BOARD
SK-4 BOARD (SYSTEM CONTROL)
COMMUNICATION CONTROL
BATTERY END SENSOR
DS-8 BOARD
CN109
CN110
CN105
CN101
CN112
FRYING ERASE OSC
FE-4 BOARD
CN506
CN503
CN513
DRUM, CAPSTAN SERVO
MECHANISM CONTROL
PS602
PS601
REG
BRAKE SOLENOID DRIVE
CN504
CN502
MC-8 BOARD
SV 5V
CAP Vcc
CN509
DRUM MOTOR DRIVE
CAPSTAN MOTOR DRIVE
SV-14 BOARD (SERVO)
CN514
MOTOR POWR
REEL SENSOR
LOADING MOTOR DRIVE
CONTROL MOTOR DRIVE
RS-5 BOARD

3-26. VIEW FINDER BLOCK DIAGRAM


VIDEO
5 V
D003
CLAMP
Q004
VIDEO AMP
Q006
V BLK
Q005
VIDEO AMP
RV004
CONTRAST
L001
5V
Q007
OVER CURRENT DETECT
D004
OVER VOLTAGE DETECT
T001
FBT
RV001
H. FREQ
Q008
H. DRIVE
Q009
H. OUT
D007
-50V RECT
RV005
BRIGHT
D008
400V RECT
RV006
FOCUS
IC001
SYNC SEP
AFC
H. OSC
H. PREDRIVE
V SYNC TRIGGER
V. OSC
V. DRIVE
D006
DUMPER
L002
HLC
H. SIZE
RV002
V. HOLD
Q001
V. DRIVE
Q002, Q003
V. OUT
RV003
V. SIZE
Q010
PROTECT
TL-16 BOARD
LX
D011
LOW LIGHT
WB
D009
WHITE BALANCE
TALLY
D005
TALLY
D010
TAPE RUN BATTERY
TL-15 BOARD
VF-4 BOARD


006
BLK
Q005
VIDEO AMP
L001
5V
Q007
OVER CURRENT DETECT
D004
OVER VOLTAGE DETECT
Q008
H. DRIVE
Q009
H. OUT
IC001
15
H. PREDRIVE
V. DRIVE
2
1
Q001
V. DRIVE
Q002, Q003
V. OUT
RV003
V. SIZE
Q010
PROTECT
T001
FBT
1
2
3
4
5
8
D007
−50V RECT
D008
400V RECT
D006
DUMPER
H. SIZE
L002
HLC
RV004
CONTRAST
RV005
BRIGHT
RV006
FOCUS
G1
H1
HV
G3
G2
DH1
DH2
DV1
DV2
CRT
G1
V901
H1
G2
G3
HV
L901
DY
H
V
VF-4 BOARD

3-27. TIMING GENERATOR (IC707) TERMINAL FUNCTIONS (CP-11 BOARD)

Pin No.	Pin Name	I/O	Function
1	SP1	O	Sampling hold pulse for color separation
2	SHD	O	Sampling hold pulse for imager output
3	SHP	O	Sampling hold pulse for imager output
4	XV4	O	Imager drive pulse
5	XV2	O	Imager drive pulse
6	Vss		Power supply
7	HTSG	I	Test signal input (GND)
8	XV3	O	Imager drive pulse
9	XV1	O	Imager drive pulse
10	XSG2	O	Imager drive pulse
11	XSG1	O	Imager drive pulse
12	XPG	O	Imager drive pulse
13	XH2	O	Imager drive pulse
14	XH1	O	Imager drive pulse
15	A2	O	External ROM address output
16	A1	O	External ROM address output
17	A0	O	External ROM address output
18	A3	O	External ROM address output
19	VDD		Power supply
20	A4	O	External ROM address output
21	A5	O	External ROM address output
22	A6	O	External ROM address output
23	CM	I	Test signal input (GND)
24	D4	I	ROM data input
25	D3	I	ROM data input
26	D2	I	ROM data input
27	D1	I	ROM data input
28	XVCT	O	Modulation pulse for ROM power supply
29	TEST	I	Test signal input (GND)
30	CP	I	Clock input
31	Vss		Power supply
32	XCK	O	Waveform shaper output
33	CK	I	Waveform shaper input
34	FLD	I	Frame sync signal
35	HD	I	Horizontal sync signal
36	CL	O	Clock output for CX7930
37	VAA	O	Vertical preblanking signal
38	HBLK	O	Horizontal preblanking signal
39	ID	O	ID signal for line sequential scan signal
40	CLP3	O	Clamping pulse
41	CLP2	O	Clamping pulse
42	CLP1	O	Clamping pulse
43	VDD		Power supply
44	XDL2	O	CCD delay-line drive pulse
45	XDL1	O	CCD delay-line drive pulse
46	SH2	O	CCD delay-line sampling hold pulse
47	SH1	O	CCD delay-line sampling hold pulse
48	SP2	O	Sampling hold pulse for color separation

3-28. SYNC GENERATOR (IC708) TERMINAL FUNCTIONS (CP-11 BOARD)

Pin No.	Pin Name	I/O	Function
1	VRI	I	Vertical reset input
2	OFLD1	O	First field output
3	OBF/COLB	O	Burst flag/color blanking output
4	OSYNC	O	Composite sync signal output
5	OFLD	O	Even/odd field select output
6	OBLK	O	Composite blanking signal output
7	OLALT	O	Line select output
8	OHD	O	Horizontal drive output
9	4*f*sc OUT	O	4*f*sc output
10	4*f*sc IN	I	4*f*sc input
11	NC		
12	OVD	O	Vertical drive output
13	NC		
14	Vss		GND terminal
15	LALTRI	I	Line select reset input
16	TEST	I	Test input
17	NC		
18	NC		
19	OSC	O	Subcarrier output
20	EXT	I	Internal/external mode select
21	MODE1	I	System select input-1
22	MODE2	I	System select input-2
23	HRI	I	Horizontal reset input
24	H COM OUT	O	Phase comparator output
25	CL OUT	O	Clock output
26	CL IN	I	Clock input
27	OFH	O	Horizontal drive frequency output
28	VDD		Power supply terminal (IC board)

3-29. MODE CONTROL CPU (IC601) TERMINAL FUNCTIONS (SK-4 BOARD)

Pin No.	Pin Name	I/O	Function
1	NC		
2	MATRIX OUT control-C	O	Output for matrix decoder
3	MATRIX OUT control-B	O	Output for matrix decoder
4	MATRIX OUT control-A	O	Output for matrix decoder
5	SI	I	Serial input data on inner bus
6	SO	O	Serial output data on inner bus
7	$\overline{\text{SCK}}$	I/O	Inner bus clock
8	START	O	Communication-CPU start flag output
9	ZOOM TEL	O	Camera zooming-in control
10	LED STB	O	Data strobe for LED display serial-in/parallel-out (CX7991)
11	POWER OFF	O	Power-off control
12	MECHACON CS	O	High while communicating with mechanism-control CPU
13	VA S/P STB	O	Data strobe for audio/video serial-in/parallel-out (CX7991)
14	Not used		
15	$\overline{\text{D SERVO CS}}$	O	High while communicating with servo IC (CX20035)
16	SYSTEM RESET	O	Output to reset system when power supply goes on
17	ZOOM WIDE	O	Camera zooming-out control
18	CAM ON	O	Camera power supply (camera D/D CON) control signal
19	VTR ON	O	High while VTR power supply is on
20	X2		Not used
21	X1	(I)	Not used
22	V_{SS}	I	GND
23	VLC_3	O	LCD drive voltage control
24	VLC_2	O	LCD drive voltage control
25	VLC_1	O	LCD drive voltage control
26	V_{DD}	I	SYS 5V (unswitched)
27	COM3	O	LCD common signal output
28	COM2	O	LCD common signal output
29	COM1	O	LCD common signal output
30	COM0	O	LCD common signal output
31 | 44	Not used		
45	S9	O	LCD segment signal output
46	S8	O	LCD segment signal output
47	S7	O	LCD segment signal output
48	S6	O	LCD segment signal output
49	S5	O	LCD segment signal output
50	S4	O	LCD segment signal output
51	S3	O	LCD segment signal output
52	S2	O	LCD segment signal output
53	S1	O	LCD segment signal output
54	S0	O	LCD segment signal output
55	INIT1	I	External interrupt request
56	RESET	I	Mode control reset
57	CL1	I	External system clock input
58	V_{DD}	I	SYS 5V (unswitched)
59	Not used		
60	SCAN IN D	I	Matrix input
61	SCAN IN C	I	Matrix input
62	SCAN IN B	I	Matrix input
63	SCAN IN A	I	Matrix input
64	MATRIX OUT control-D	I	Output for matrix decoder

3-30. MECHANISM CONTROL CPU (IC601) TERMINAL FUNCTIONS (MC-8 BOARD)

Pin No.	Pin Name	I/O	Function
1	FG4	O	Capstan FG count-down by 1/4
2	FG8	O	Capstan FG count-down by 1/8
3	CM CONT (CW)	O	Control-motor revolution (clockwise/counterclockwise) control CW
4	CM CONT (CCW)	O	Control-motor revolution (clockwise/counterclockwise) control CCW
5	LM CONT (CW)	O	Loading-motor revolution (clockwise/counterclockwise) control CW
6	LM CONT (CCW)	O	Loading-motor revolution (clockwise/counterclockwise) control CCW
7	$\overline{\text{BRAKE START}}$	O	Main brake start control
8	$\overline{\text{BRAKE HOLD}}$	O	Main brake hold control
9	$\overline{\text{CAP ON}}$	O	Capstan-on control
10	CAP CW/$\overline{\text{CCW}}$	O	Capstan revolution (clockwise/counterclockwise) control
11	NC		
12	SEL 1	O	ATF pilot select-1
13	SEL 2	O	ATF pilot select-2
14	TS A	O	ATF error voltage hold
15	TS B	O	ATF lock hold
16	NC		
17	NC		
18	S/S 5V	I	S/S 5V power supply (Switched)
19	NC		
20	$\overline{\text{DRUM ON}}$	O	Drum-on control
21	$\overline{\text{TAPE T/E LED}}$	O	Top/end-of-tape LED control
22	RP PB MODE	O	RP amplifier control
23	$\overline{\text{FEP}}$	O	Flying erase-head control
24	RF SW P	I	RF switching pulse input
25	MECHACON CS	I	Mode-control-CPU communication request
26	$\overline{\text{CAP PULSE}}$	O	Capstan drive voltage maximizing signal
27	CUE + REVIEW	O	High for cue/review operation
28	$\overline{\text{MATRIX OUT 1}}$	O	Matrix output
29	$\overline{\text{MATRIX OUT 2}}$	O	Matrix output
30	NC		
31	$\overline{\text{MATRIX OUT 3}}$	O	Matrix output
32	MATRIX IN 1	I	Matrix input
33	MATRIX IN 2	I	Matrix input
34	MATRIX IN 3	I	Matrix input
35	MATRIX IN 4	I	Matrix input
36	EX	I	Clock generator input
37	X	O	Clock generator output
38	$\overline{\text{RESET}}$	I	Mechanism-control-CPU reset signal ($\overline{\text{system reset}}$) issued from mode-control CPU
39	FG	I	Capstan FG input
40	NC		
41	NC		
42	GND		GND
43	NC		
44	SCK	O	8 clock output connected to inner-bus SCK line when MECHACONCS is at High.
45	SO	I	Input terminal of serial data from mode-control CPU, which is connected to inner-bus SO line
46	SI	O	Output terminal of serial data to mode-control CPU, which is connected to inner-bus SI line
47	D SERVO RESET	O	Reset signal for servo control IC (CX20035)
48	FG 2	O	Capstan FG count-down by 1/2

3-31. COMMUNICATION CONTROL CPU (IC603) TERMINAL FUNCTIONS (DS-8 BOARD)

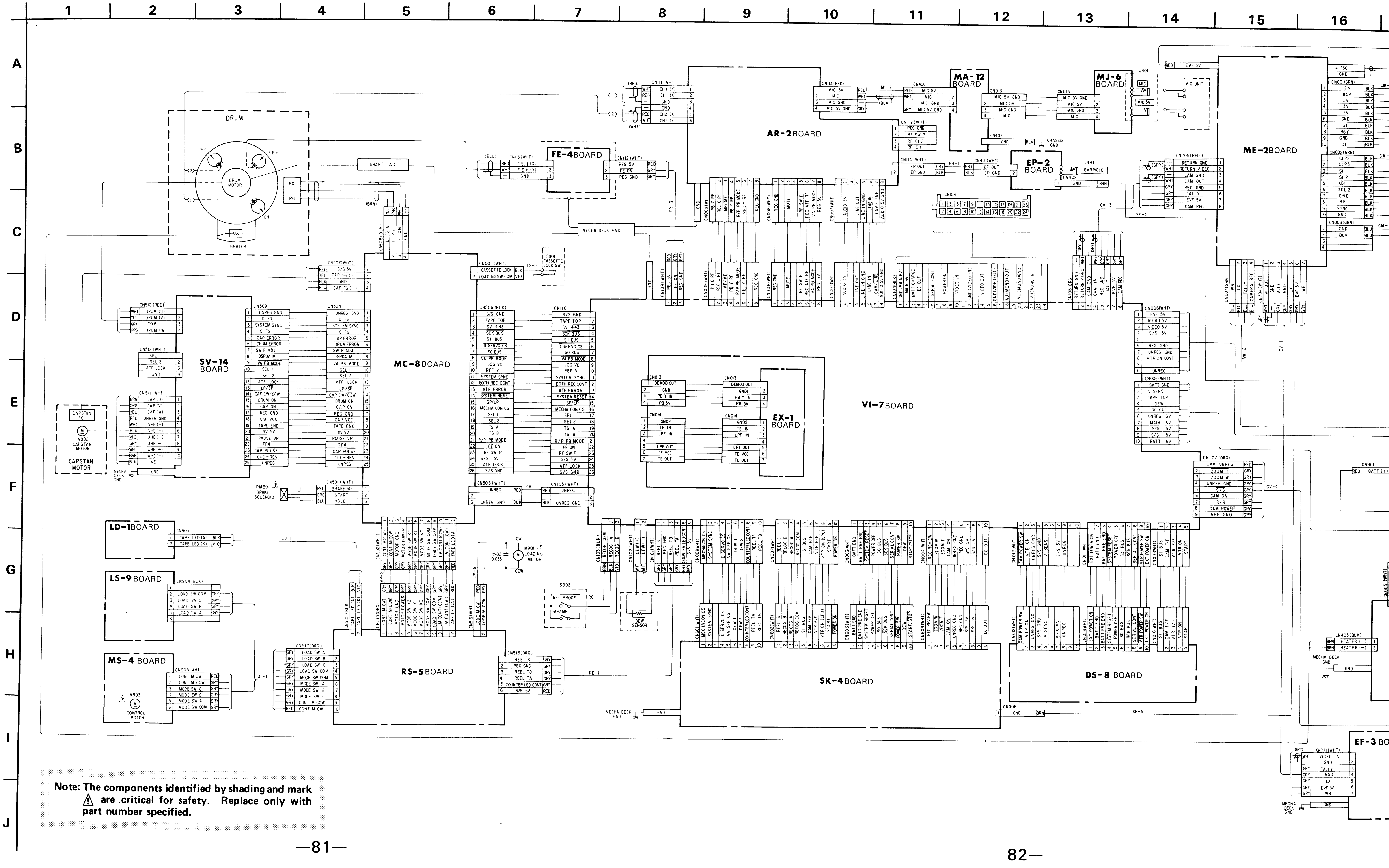
Pin No.	Pin Name	I/O	Function
1	SCK EN	O	Clock output enable
2	$\overline{\text{SCK OUT}}$	O	Clock issued to inner bus
3	INVALID FLAG	O	Not used
4	START FLAG	I	Communication start from mode-control CPU
5	MODE	I	Open
6	X	O	Clock generator output
7	EX	I	Clock generator input
8	Vss	I	GND
9	VTR AREA	O	Data communication time at High (Inner bus → External bus)
10	CAM/TT AREA	O	Data communication time at High (External bus → Inner bus)
11	TT AREA	O	Not used
12	CAM AREA	O	Not used
13	START BIT	O	Start bit on external CTRL-L bus
14	CAM CS		Not used
15	$\overline{\text{SYSTEM RESET}}$	I	Communication control CPU reset issued from mode-control CPU
16	Vcc		S/S 5V power supply (Switched)

3-32. SERIAL-IN/PARALLEL-OUT FOR AUDIO/VIDEO SIGNAL (IC701) TERMINAL FUNCTIONS (VI-7 BOARD)

Pin No.	Pin Name	I/O	Function
1	V8/$\overline{\text{D9}}$ (P1)	O	V8/$\overline{\text{D9}}$ (SP/$\overline{\text{LP}}$) mode select
2	JOG (P2)	O	JOG mode
3	MP/$\overline{\text{ME}}$ (P3)	O	Type-of-tape select
4	VA PB MODE (P4)	O	Playback mode (High)
5	CAM/$\overline{\text{LINE}}$ (P5)	O	Camera/line select
6	CAM REC (P6)	O	Camera recording mode signal issued to camera
7	TALLY (P7)	O	Tally LED
8	$\overline{\text{VA PB MODE}}$ (P8)	O	Playback mode (Low)
9	VIDEO MUTE (P9)	O	Video mute control
10	Vss		GND
11	AUDIO MUTE (P10)	O	Audio mute control
12	(P11)	O	
13	SYS RESET (P12)	O	System reset output
14	SO		Not used
15	$\overline{\text{SET}}$		Connected to V_{DD}
16	$\overline{\text{RESET}}$		Connected to V_{DD}
17	STB	I	Latch signal specifying to store data in internal register (when STB is high), which is connected to V/A SP STB line from mode-control CPU
18	SI (DATA)	I	Input terminal of serial data from mode-control CPU, which is connected to inner bus SO line
19	CLK	I	Clock input from mode-control CPU, which is connected to inner bus SCK line
20	V_{DD}		S/S 5V

SECTION 4
SCHEMATIC DIAGRAM AND PRINTED WIRING BOARDS

4-1. FRAME SCHEMATIC DIAGRAM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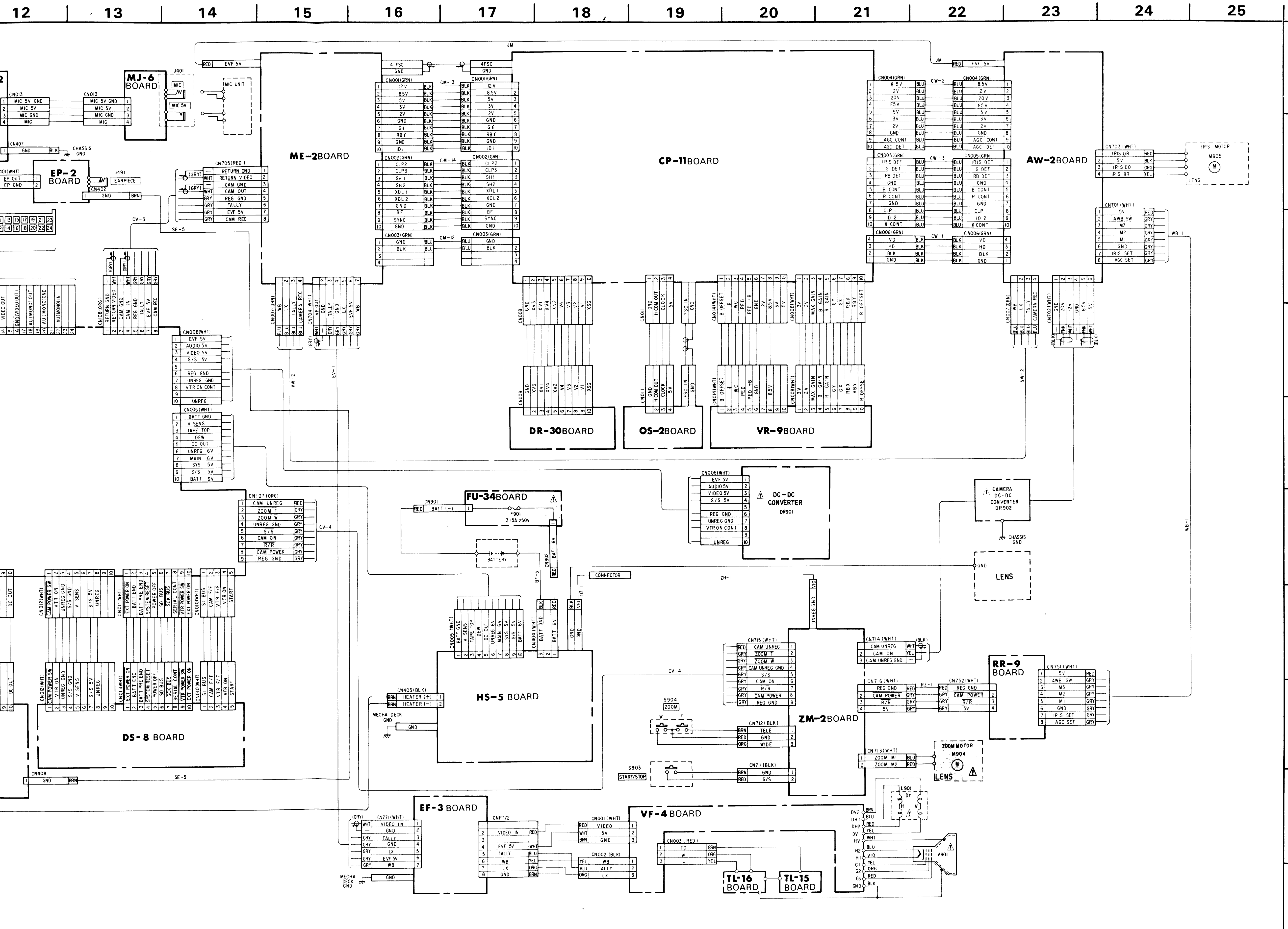
DRUM
DRUM MOTOR
CH1
CH2
FEH
FG
PG
HEATER
SHAFT GND
FE-4BOARD
CN113(WHT)
CN112(WHT)
CN111(WHT)
AR-2BOARD
MA-12 BOARD
MJ-6 BOARD
EP-2 BOARD
J401
MIC UNIT
J491
EARPIECE
CHASSIS GND
MECHA DECK GND
ME-2BOARD
SV-14 BOARD
MC-8BOARD
VI-7BOARD
EX-1 BOARD
CAPSTAN FG
M902 CAPSTAN MOTOR
CAPSTAN MOTOR
PM901 BRAKE SOLENOID
S901 CASSETTE LOCK SW
LD-1BOARD
LS-9 BOARD
MS-4 BOARD
M903 CONTROL MOTOR
RS-5BOARD
M901 LOADING MOTOR
C902 0.033
CW
CCW
S902
REC PROOF
MP/ME
DEW SENSOR
SK-4BOARD
DS-8 BOARD
EF-3 BO
CN408
SE-5
CV-3
CV-4
FR-3
LD-1
CO-1
RE-1
LM-9
MR-2
PW-1
EH-1
MI-2
AW-2
EV-1
CN901
CN403(BLK)
HEATER (+)
HEATER (−)
CN771(WHT)
VIDEO IN
GND
TALLY
LX
EVF 5V
WB

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.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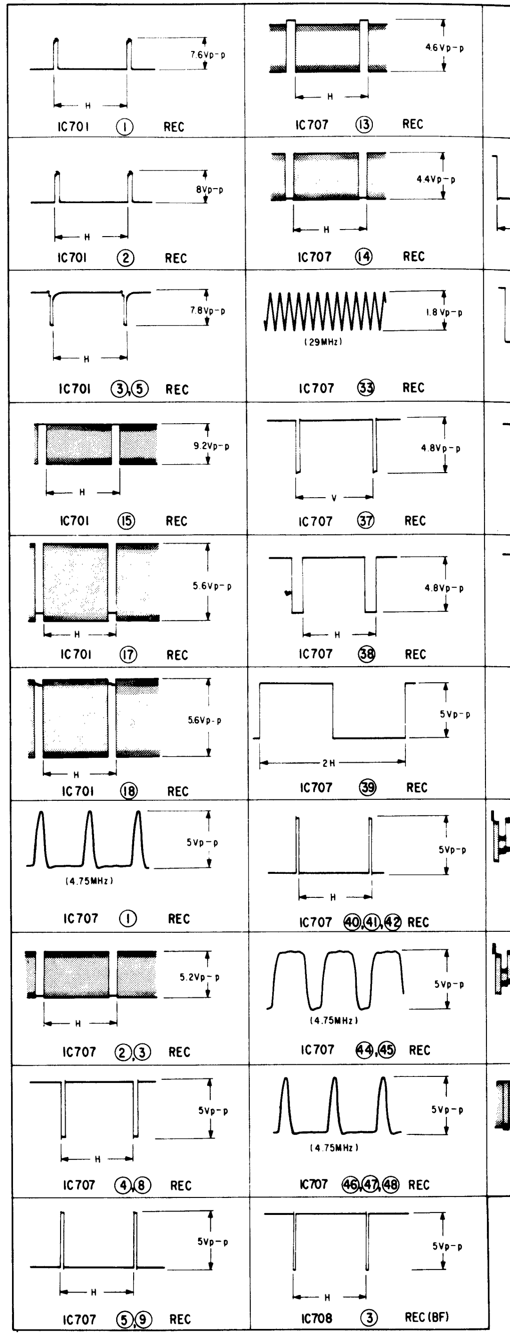
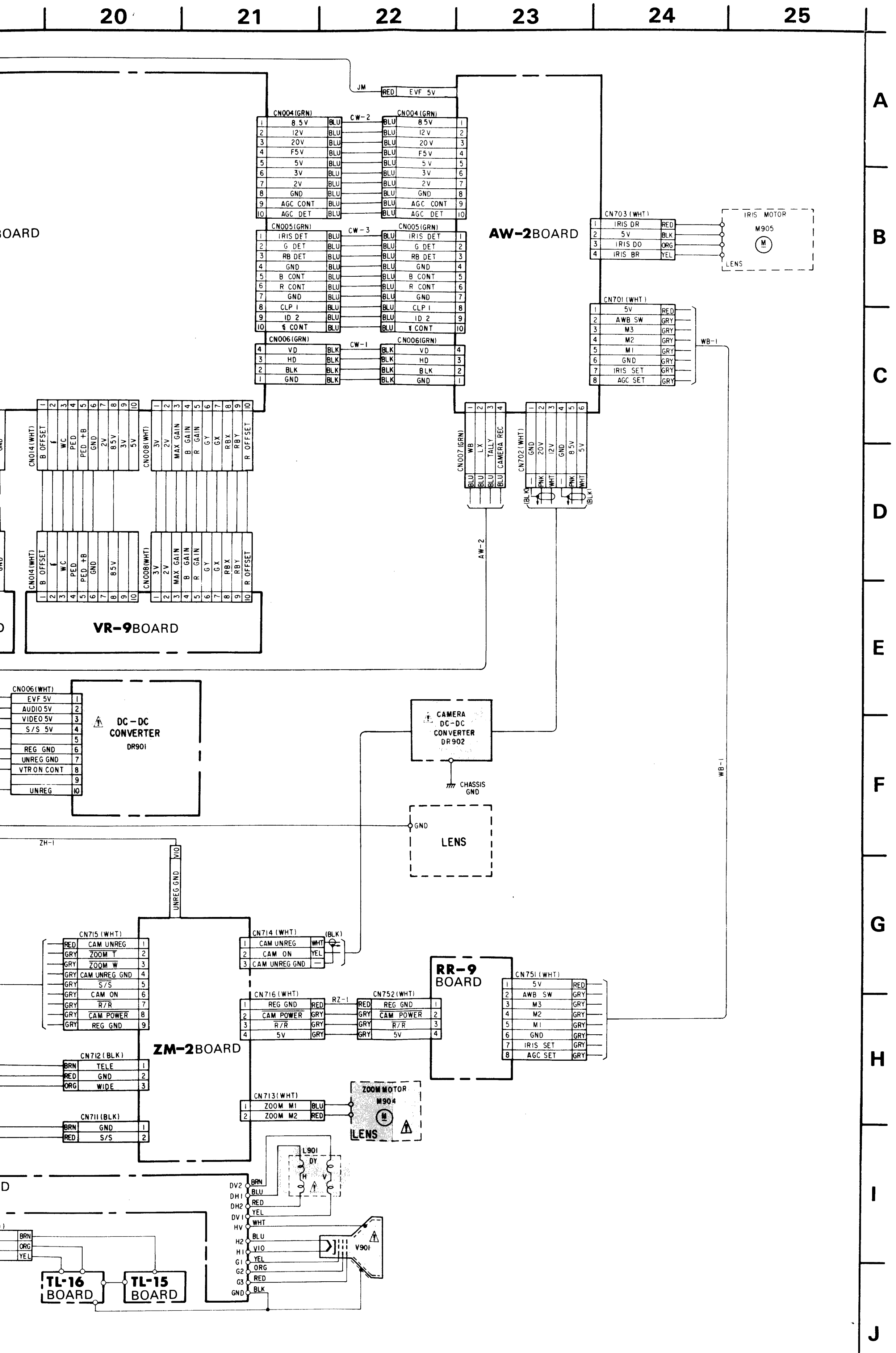
MJ-6 BOARD
J401
MIC UNIT
CN013
MIC 5V GND
MIC 5V
MIC GND
MIC
CN407
GND
CHASSIS GND
EP-2 BOARD
J491
EARPIECE
CN402
CV-3
SE-5
CN705(RED)
RETURN GND
RETURN VIDEO
CAM GND
CAM OUT
REG GND
TALLY
EVF 5V
CAM REC
ME-2BOARD
CN001(GRN)
CM-13
CN002(GRN)
CM-14
CN003(GRN)
CM-12
4 FSC
GND
JM
CP-11BOARD
CN004(GRN)
CW-2
CN005(GRN)
CW-3
CN006(GRN)
CW-1
AW-2BOARD
CN703(WHT)
IRIS DR
5V
IRIS DO
IRIS BR
IRIS MOTOR
M905
LENS
CN701(WHT)
AWB SW
M3
M2
M1
GND
IRIS SET
AGC SET
WB-1
CN007(GRN)
CN704(WHT)
CN009
CN011
CN014(WHT)
CN008(WHT)
CN702(WHT)
DR-30BOARD
OS-2BOARD
VR-9BOARD
CN006(WHT)
CN005(WHT)
CN107(ORG)
CAM UNREG
ZOOM T
ZOOM W
UNREG GND
S/S
CAM ON
R/R
CAM POWER
REG GND
CV-4
DC-DC CONVERTER
DR901
CAMERA DC-DC CONVERTER
DR902
CHASSIS GND
FU-34BOARD
CN901
BATT (+)
F901
3.15A 250V
BATTERY
CN902
BATT 6V
BT-5
CONNECTOR
ZH-1
LENS
GND
CN005(WHT)
CN404(WHT)
HS-5 BOARD
CN403(BLK)
HEATER (+)
HEATER (−)
MECHA DECK GND
DS-8 BOARD
CN012(WHT)
CN011(WHT)
CN010(WHT)
CN408
GND
CN715(WHT)
CN714(WHT)
CN716(WHT)
RZ-1
CN752(WHT)
RR-9 BOARD
CN751(WHT)
ZM-2BOARD
S904
ZOOM
CN712(BLK)
TELE
GND
WIDE
S903
START/STOP
CN711(BLK)
CN713(WHT)
ZOOM M1
ZOOM M2
ZOOM MOTOR
M904
LENS
L901
DY
EF-3 BOARD
CN771(WHT)
VIDEO IN
TALLY
EVF 5V
LX
WB
CNP772
VF-4 BOARD
CN001(WHT)
CN002(BLK)
CN003(RED)
TL-16 BOARD
TL-15 BOARD
V901
MECHA DECK GND

CP-11BOARD (CAMERA)


7.6Vp-p
IC701 ① REC
4.6Vp-p
IC707 ⑬ REC
8Vp-p
IC701 ② REC
4.4Vp-p
IC707 ⑭ REC
7.8Vp-p
IC701 ③⑤ REC
1.8Vp-p
(29MHz)
IC707 ㉝ REC
9.2Vp-p
IC701 ⑮ REC
4.8Vp-p
IC707 ㊲ REC
5.6Vp-p
IC701 ⑰ REC
4.8Vp-p
IC707 ㊳ REC
5.6Vp-p
IC701 ⑱ REC
5Vp-p
2H
IC707 ㊴ REC
5Vp-p
(4.75MHz)
IC707 ① REC
5Vp-p
IC707 ㊵㊶㊷ REC
5.2Vp-p
IC707 ②③ REC
5Vp-p
(4.75MHz)
IC707 ㊹㊺ REC
5Vp-p
IC707 ④⑧ REC
5Vp-p
(4.75MHz)
IC707 ㊻㊼㊽ REC
5Vp-p
IC707 ⑤⑨ REC
5Vp-p
IC708 ③ REC(BF)
H
V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JM
RED EVF 5V
CN004(GRN)
CW-2
8.5V
12V
20V
F5V
5V
3V
2V
GND
AGC CONT
AGC DET
CN005(GRN)
CW-3
IRIS DET
G DET
RB DET
B CONT
R CONT
CLP I
ID 2
Y CONT
CN006(GRN)
CW-1
VD
HD
BLK
AW-2BOARD
CN703(WHT)
IRIS DR
IRIS DO
IRIS BR
IRIS MOTOR
M905
LENS
CN701(WHT)
AWB SW
M3
M2
M1
IRIS SET
AGC SET
WB-1
CN707(GRN)
WB
LX
TALLY
CAMERA REC
CN702(WHT)
AW-2
CN014(WHT)
B OFFSET
WC
PED
PED RB
CN008(WHT)
MAX GAIN
R GAIN
B GAIN
GY
GX
RBX
RBY
R OFFSET
VR-9BOARD
CN006(WHT)
EVF 5V
AUDIO 5V
VIDEO 5V
S/S 5V
REG GND
UNREG GND
VTRON CONT
UNREG
DC-DC CONVERTER
DR901
CAMERA DC-DC CONVERTER
DR902
CHASSIS GND
GND
LENS
ZH-1
UNREG GND
VIO
CN715(WHT)
CAM UNREG
ZOOM T
ZOOM W
CAM UNREG GND
S/S
CAM ON
R/R
CAM POWER
REG GND
CN714(WHT)
CAM UNREG
CAM ON
CAM UNREG GND
CN716(WHT)
RZ-1
CN752(WHT)
REG GND
CAM POWER
R/R
5V
ZM-2BOARD
RR-9 BOARD
CN751(WHT)
5V
AWB SW
M3
M2
M1
GND
IRIS SET
AGC SET
CN712(BLK)
TELE
GND
WIDE
CN711(BLK)
GND
S/S
CN713(WHT)
ZOOM M1
ZOOM M2
ZOOM MOTOR
M904
LENS
L901
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DV2
DH1
DH2
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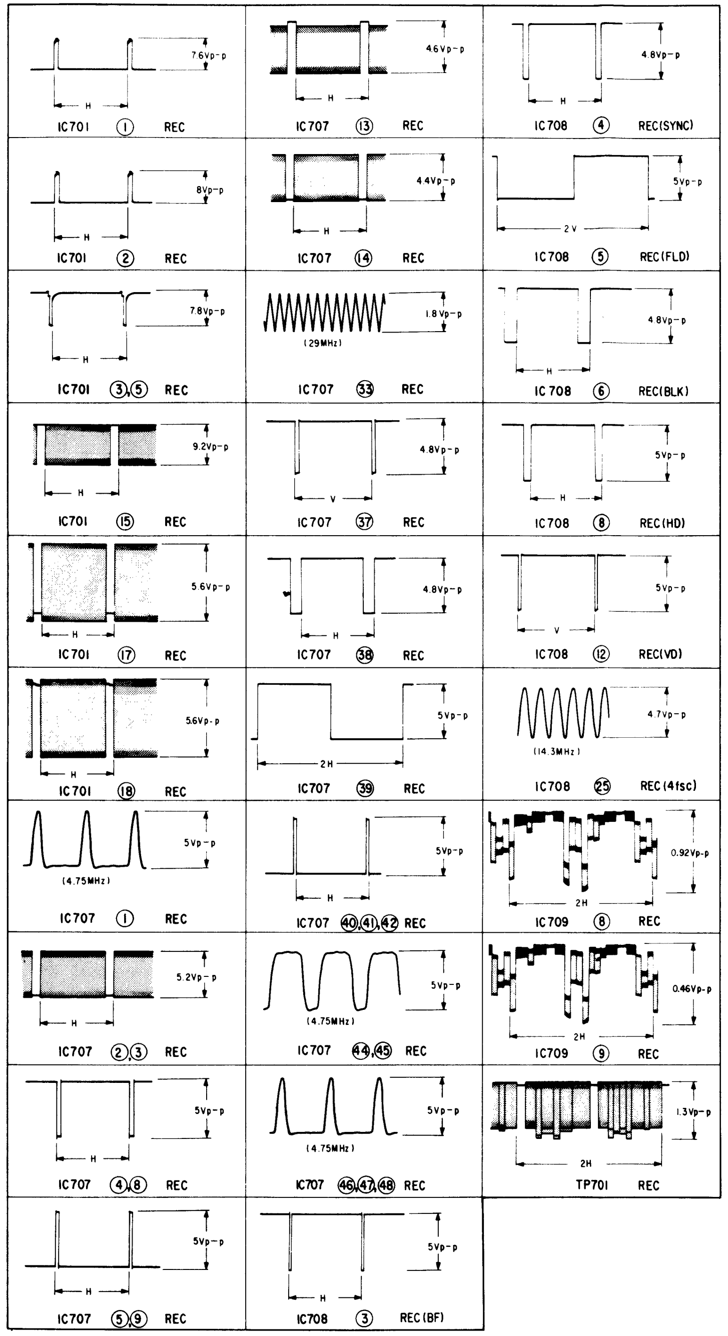
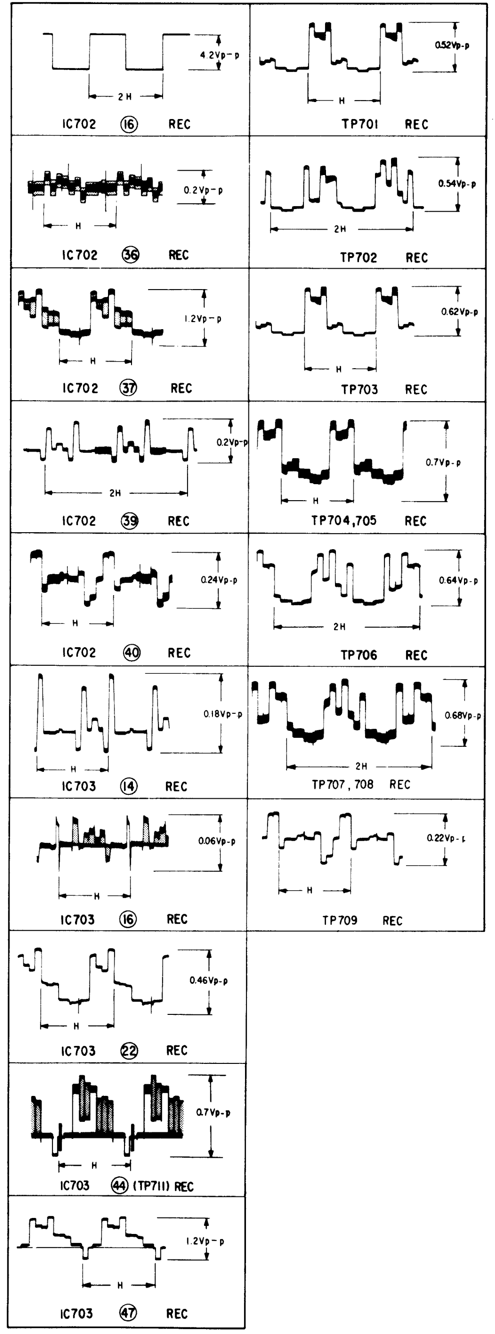
V901
TL-16 BOARD
TL-15 BOARD

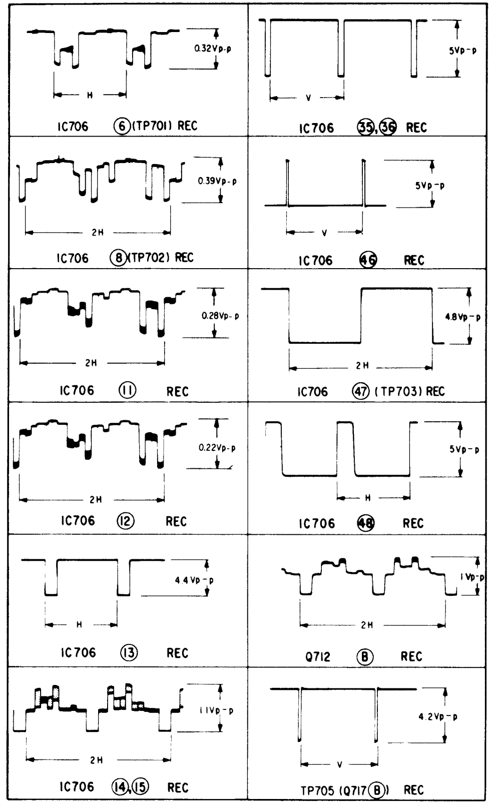
CP-11BOARD (CAMERA)



ME-2BOARD (CAMERA)

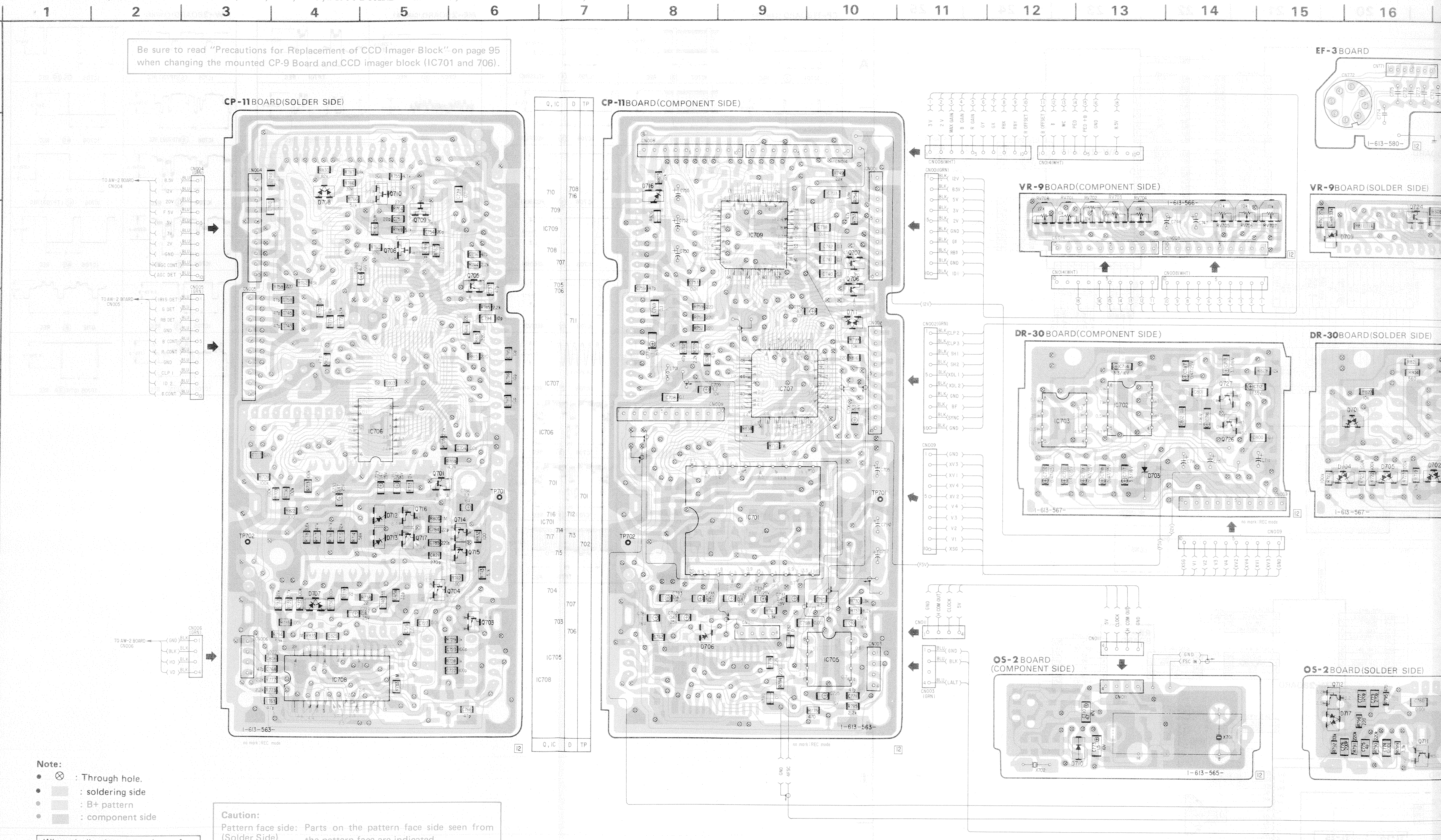


AW-2BOARD (CAMERA)



4-2. ZM-2 (ZOOM MOTOR DRIVE), RR-9 (SWITCH), CP-11 (CCD IMAGER/VIDEO PROCESS), OS-2 (OSC), VR-9 (VIDEO PROCESS), DR-30 (TIMING GENERATOR), ME-2 (MATRIX/ENCODER), EF-3 (EVF CONNECTOR) PRINTED WIRING BOARDS

– Ref. No. ZM-2, RR-9 BOARD : 1000 series, CP-1, OS-2, VR-9, DR-30 BOARD : 2000 series, ME-2 BOARD : 3000 series, EF-3 BOARD : 5000 series –



Be sure to read "Precautions for Replacement of CCD Imager Block" on page 95 when changing the mounted CP-9 Board and CCD imager block (IC701 and 706).

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CP-11 BOARD (SOLDER SIDE)
CP-11 BOARD (COMPONENT SIDE)
EF-3 BOARD
VR-9 BOARD (COMPONENT SIDE)
VR-9 BOARD (SOLDER SIDE)
DR-30 BOARD (COMPONENT SIDE)
DR-30 BOARD (SOLDER SIDE)
OS-2 BOARD (COMPONENT SIDE)
OS-2 BOARD (SOLDER SIDE)
TO AW-2 BOARD CN004
TO AW-2 BOARD CN005
TO AW-2 BOARD CN006
IC709
IC707
IC706
IC701
IC708
IC705
IC703
IC702
TP701
TP702
1-613-563-
1-613-566-
1-613-567-
1-613-565-
1-613-580-
Q, IC
D
TP

Note:

- ⊗ : Through hole.
- ▨ : soldering side
- ▨ : B+ pattern
- ▨ : component side

When indicating parts by reference number, please include the board name.

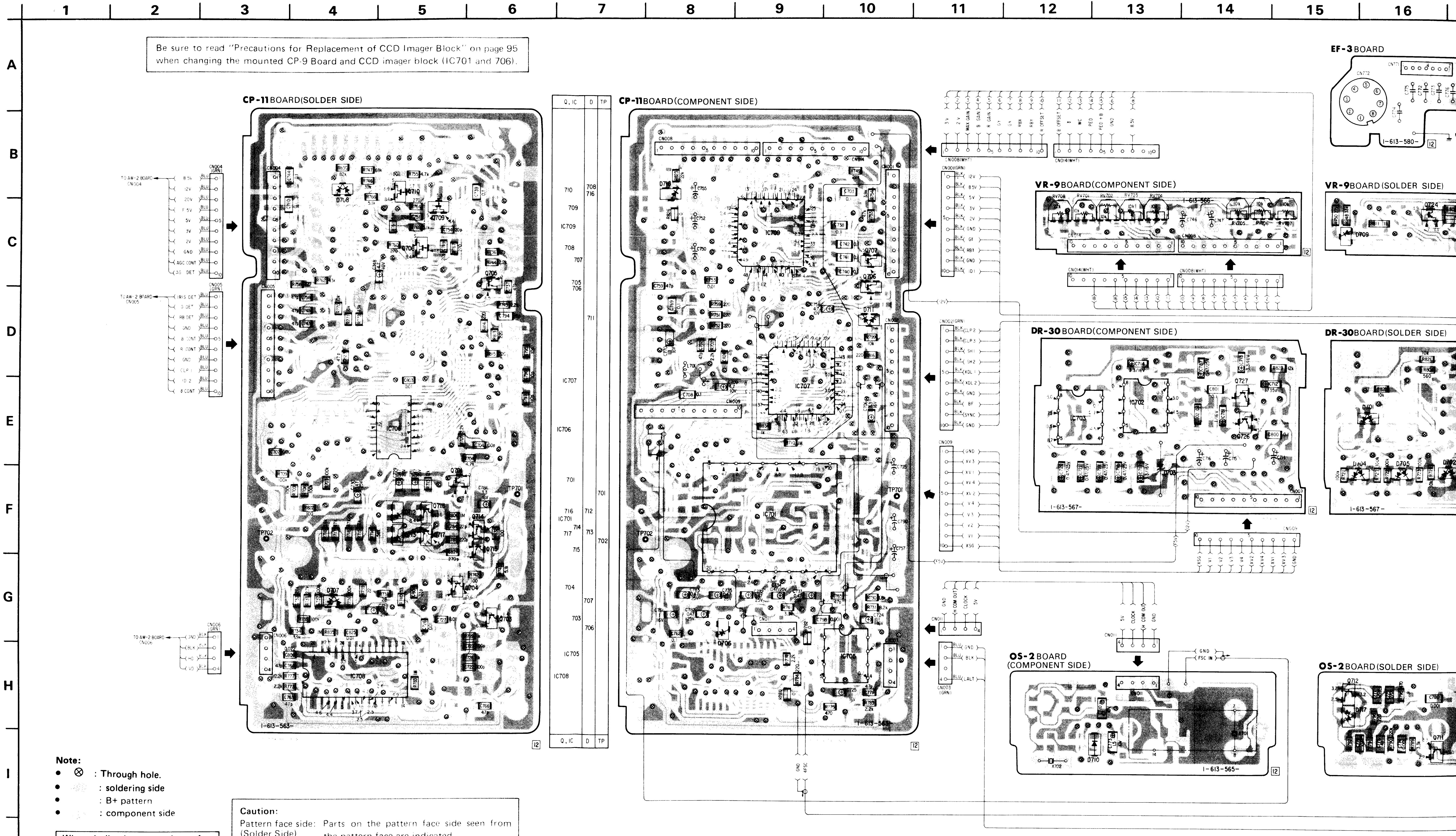
Caution:

Pattern face side: (Solder Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the pattern face are indicated.

4-2. ZM-2 (ZOOM MOTOR DRIVE), RR-9 (SWITCH), CP-11 (CCD IMAGER/VIDEO PROCESS), OS-2 (OSC), VR-9 (VIDEO PROCESS), DR-30 (TIMING GENERATOR), ME-2 (MATRIX/ENCODER), EF-3 (EVF CONNECTOR) PRINTED WIRING BOARDS

– Ref. No. ZM-2, RR-9 BOARD : 1000 series, CP-1, OS-2, VR-9, DR-30 BOARD : 2000 series, ME-2 BOARD : 3000 series, EF-3 BOARD : 5000 series –

Be sure to read "Precautions for Replacement of CCD Imager Block" on page 95 when changing the mounted CP-9 Board and CCD imager block (IC701 and 706).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CP-11 BOARD (SOLDER SIDE)
CP-11 BOARD (COMPONENT SIDE)
VR-9 BOARD (COMPONENT SIDE)
VR-9 BOARD (SOLDER SIDE)
DR-30 BOARD (COMPONENT SIDE)
DR-30 BOARD (SOLDER SIDE)
OS-2 BOARD (COMPONENT SIDE)
OS-2 BOARD (SOLDER SIDE)
EF-3 BOARD
TO AW-2 BOARD CN004
TO AW-2 BOARD CN005
TO AW-2 BOARD CN006
CN004 (GRN)
CN005 (GRN)
CN006 (GRN)
CN008 (WHT)
CN014 (WHT)
CN001 (GRN)
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CN009
CN003 (GRN)
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IC701
IC702
IC703
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IC706
IC707
IC708
IC709
TP701
TP702
1-613-563-
1-613-565-
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1-613-567-
1-613-580-
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Note:

- ⊗ : Through hole.
- : soldering side
- : B+ pattern
- : component side

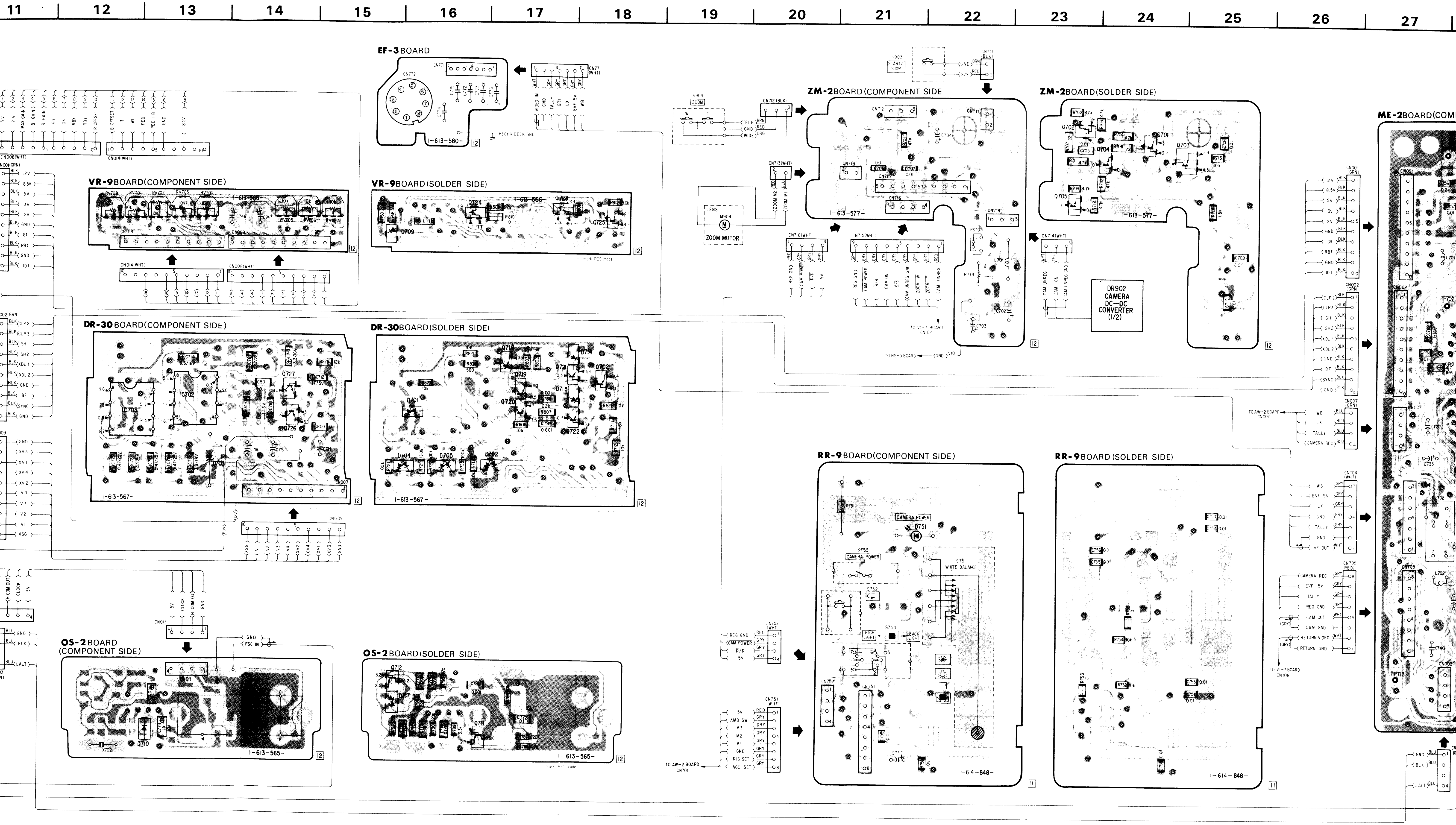
When indicating parts by reference number, please include the board name.

Caution:

Pattern face side: (Solder Side) Parts on the pattern face side seen from the pattern face are indicated.

Parts face side: (Component Side) Parts on the parts face side seen from the pattern face are indicated.

), ME-2 (MATRIX/ENCODER), EF-3 (EVF CONNECTOR) PRINTED WIRING BOARDS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EF-3 BOARD
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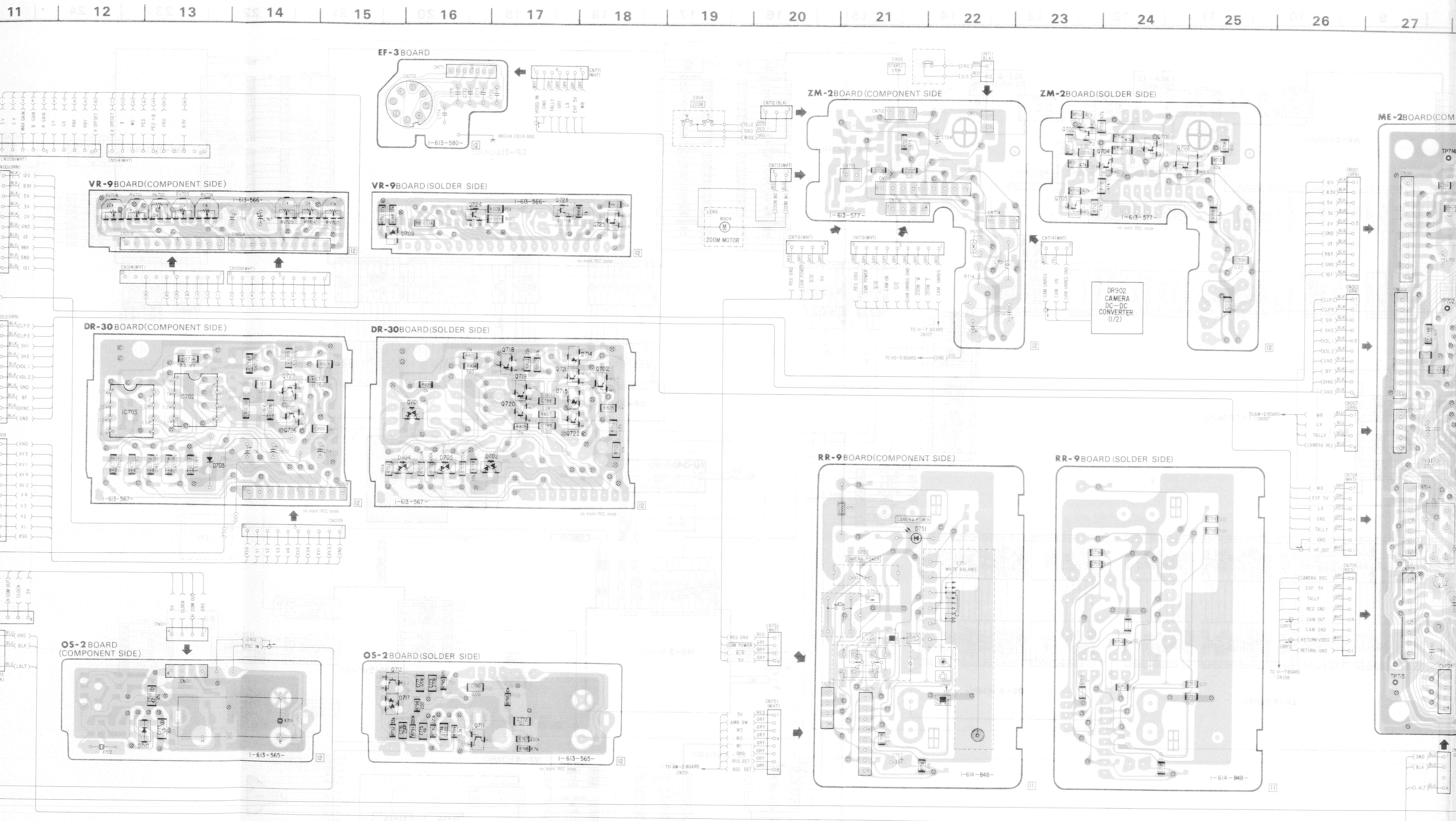
VR-9 BOARD (COMPONENT SIDE)
VR-9 BOARD (SOLDER SIDE)
1-613-566-
DR-30 BOARD (COMPONENT SIDE)
DR-30 BOARD (SOLDER SIDE)
1-613-567-
OS-2 BOARD (COMPONENT SIDE)
OS-2 BOARD (SOLDER SIDE)
1-613-565-
ZM-2 BOARD (COMPONENT SIDE
ZM-2 BOARD (SOLDER SIDE)
1-613-577-
ME-2 BOARD (COM
RR-9 BOARD (COMPONENT SIDE)
RR-9 BOARD (SOLDER SIDE)
1-614-848-
S904 ZOOM
LENS
M904
ZOOM MOTOR
S903 START/STOP
DR902 CAMERA DC-DC CONVERTER (1/2)
TO HS-5 BOARD
TO VI-7 BOARD CN107
TO VI-7 BOARD CN108
TO AW-2 BOARD CN007
TO AW-2 BOARD CN701
CAMERA POWER
D751
S753 CAMERA POWER
S751 WHITE BALANCE
S752
S754
HIGH LIGHT
BACK LIGHT
MECHA DECK GND

), ME-2 (MATRIX/ENCODER), EF-3 (EVF CONNECTOR) PRINTED WIRING BOARDS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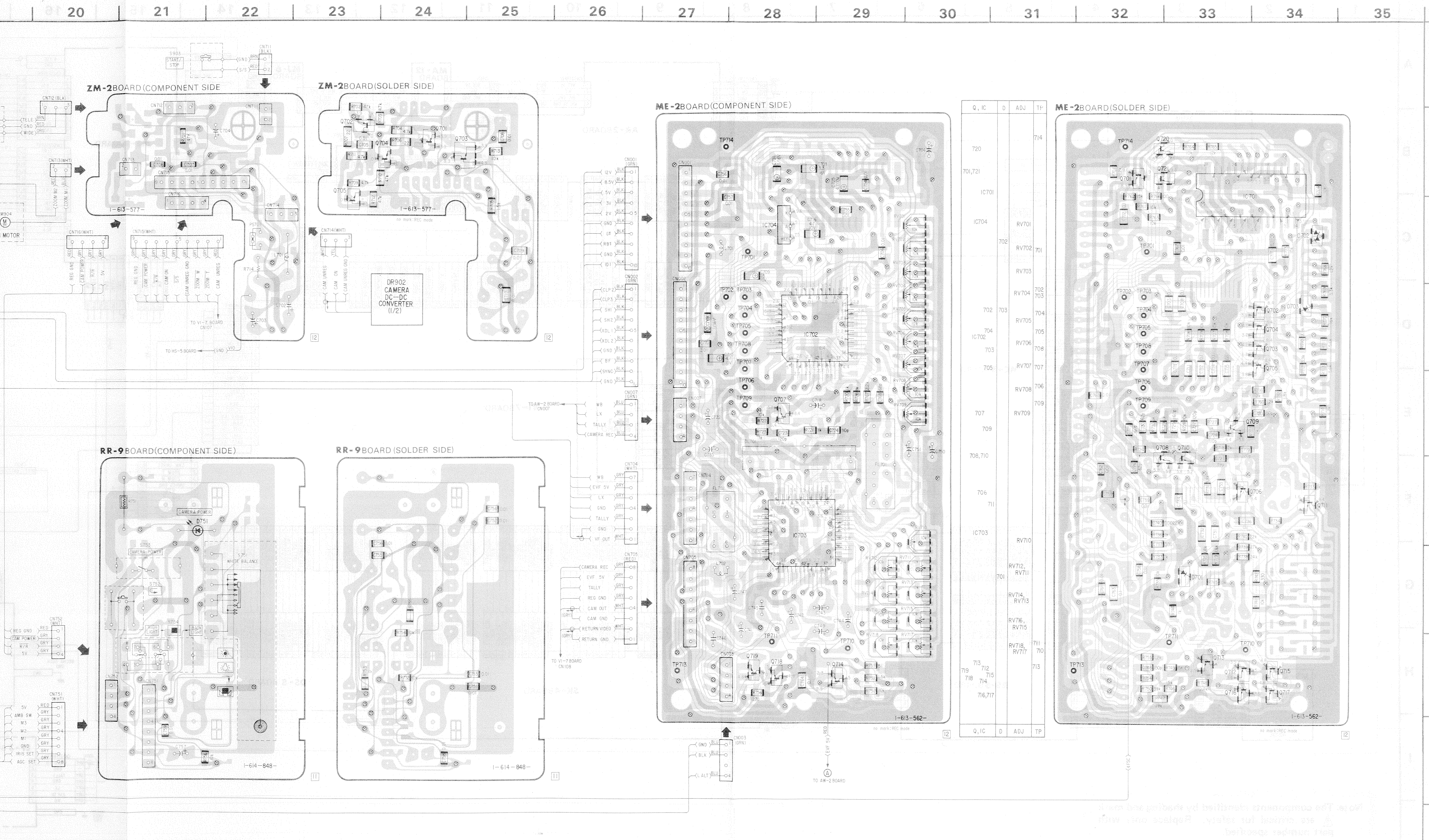
EF-3 BOARD
1-613-580-
VR-9 BOARD (COMPONENT SIDE)
1-613-566-
VR-9 BOARD (SOLDER SIDE)
DR-30 BOARD (COMPONENT SIDE)
1-613-567-
DR-30 BOARD (SOLDER SIDE)
OS-2 BOARD (COMPONENT SIDE)
1-613-565-
OS-2 BOARD (SOLDER SIDE)
ZM-2 BOARD (COMPONENT SIDE)
1-613-577-
ZM-2 BOARD (SOLDER SIDE)
ZOOM MOTOR
DR902 CAMERA DC-DC CONVERTER (1/2)
RR-9 BOARD (COMPONENT SIDE)
1-614-848-
RR-9 BOARD (SOLDER SIDE)
ME-2 BOARD (COM
CAMERA POWER
WHITE BALANCE
no mark : REC mode
TO VI-7 BOARD CN107
TO HS-5 BOARD
TO AW-2 BOARD CN007
TO AW-2 BOARD CN701
TO VI-7 BOARD CN108
MECHA DECK GND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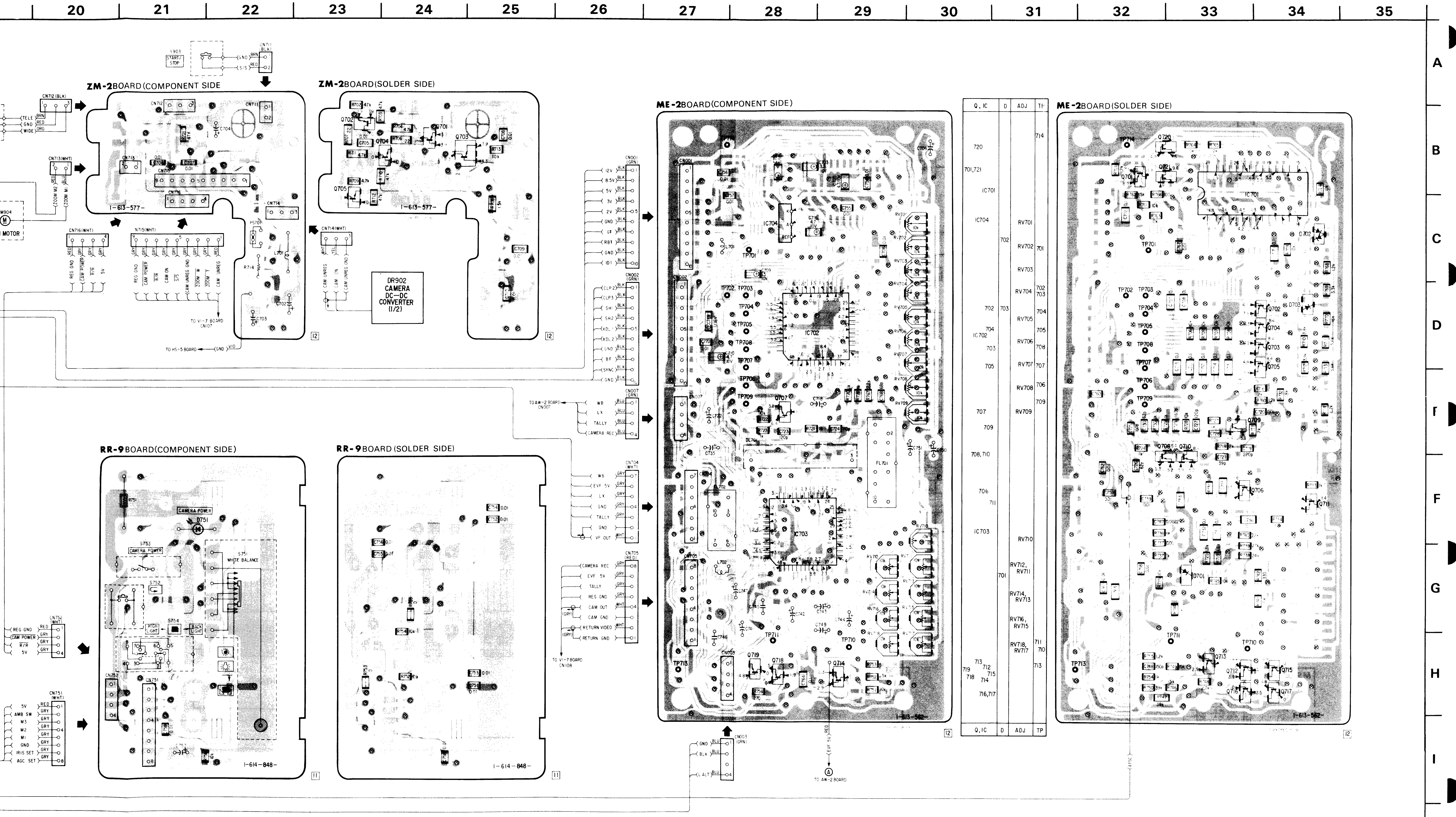
J
ZM-2 BOARD (COMPONENT SIDE)
ZM-2 BOARD (SOLDER SIDE)
ME-2 BOARD (COMPONENT SIDE)
ME-2 BOARD (SOLDER SIDE)
RR-9 BOARD (COMPONENT SIDE)
RR-9 BOARD (SOLDER SIDE)
S903 START/STOP
CN711 (BLK)
CN712 (BLK)
CN713 (WHT)
CN715 (WHT)
CN716 (WHT)
CN714 (WHT)
M904 MOTOR
TELE
GND
WIDE
ZOOM M2
ZOOM M1
REG GND
CAM POWER
R/R
5V
CAM UNREG
CAM ON
CAM UNREG GND
ZOOM W
ZOOM T
TO VI-7 BOARD CN107
TO HS-5 BOARD
VIO
DR902 CAMERA DC-DC CONVERTER (1/2)
1-613-577-
no mark: REC mode
CN001 (GRN)
12V
8.5V
5V
3V
2V
GND
GT
RBT
GND
ID1
CN002 (GRN)
CLP2
CLP3
SH1
SH2
XDL1
XDL2
GND
BF
SYNC
GND
CN007 (GRN)
TO AW-2 BOARD CN007
WB
LX
TALLY
CAMERA REC
CN704 (WHT)
WB
EVF 5V
LX
GND
TALLY
GND
VF OUT
CN705 (RED)
CAMERA REC
EVF 5V
TALLY
REG GND
CAM OUT
CAM GND
RETURN VIDEO
RETURN GND
TO VI-7 BOARD CN108
CN003 (GRN)
GND
BLK
L ALT
EVF 5V
TO AW-2 BOARD
IC701
IC702
IC703
IC704
1-613-562-
Q, IC
D
ADJ
TP
720
701,721
IC701
IC704
RV701
702
RV702
RV703
RV704
702
703
RV705
704
IC702
703
RV706
705
RV707
RV708
707
RV709
709
708,710
706
711
IC703
RV710
RV712, RV711
701
RV714, RV713
RV716, RV715
RV718, RV717
713
712
719
718
715
714
716,717
714
701
702
703
704
705
708
707
706
709
711
710
713
CN751
CN752 (WHT)
CN753
REG GND
CAM POWER
R/R
5V
AMB SW
M3
M2
M1
GND
IRIS SET
AGC SET
CAMERA POWER
D751
S751 WHITE BALANCE
S752 CAMERA POWER
S753
S754
BACK LIGHT
1-614-848-
11
12


20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
A
B
C
D
E
F
G
H
I
J
S903 START/STOP
CN711 (BLK)
ZM-2BOARD(COMPONENT SIDE)
ZM-2BOARD(SOLDER SIDE)
CN712 (BLK)
TELE
GND
WIDE
CN713(WHT)
ZOOM M2
ZOOM M1
M904
MOTOR
CN716(WHT)
REG GND
CAM POWER
R/R
5V
N715(WHT)
CAM ON
S/S
CAM UNREG GND
ZOOM W
ZOOM T
CAM UNREG
TO VI-7 BOARD CN107
CN714
CN714(WHT)
DR902 CAMERA DC-DC CONVERTER (1/2)
TO HS-5 BOARD
1-613-577-
CN001 (GRN)
12V
8.5V
5V
3V
2V
GND
GT
RBT
GND
ID1
CN002 (GRN)
CLP2
CLP3
SH1
SH2
XDL1
XDL2
GND
BF
SYNC
GND
CN007 (GRN)
TO AW-2 BOARD CN007
WB
LX
TALLY
CAMERA REC
CN704 (WHT)
EVF 5V
VF OUT
CN705 (RED)
CAM OUT
CAM GND
RETURN VIDEO
RETURN GND
TO VI-7 BOARD CN108
ME-2BOARD(COMPONENT SIDE)
ME-2BOARD(SOLDER SIDE)
IC701
IC702
IC703
IC704
FL701
DL701
1-613-562-
CN003 (GRN)
L ALT
EVF 5V
TO AW-2 BOARD
RR-9BOARD(COMPONENT SIDE)
RR-9BOARD (SOLDER SIDE)
CAMERA POWER
D751
S753
S751 WHITE BALANCE
S752
S754
HIGH LIGHT
BACK LIGHT
CN752 (WHT)
CN751 (WHT)
AMB SW
M3
M2
M1
IRIS SET
AGC SET
1-614-848-
11
12

Q, IC	D	ADJ	TP
			714
720			
701,721			
IC701			
IC704		RV701	
	702	RV702	701
		RV703	
		RV704	702 703
702	703		704
		RV705	
704 IC702			705
		RV706	708
703			
705		RV707	707
		RV708	706
			709
707		RV709	
709			
708, 710			
706			
711			
IC703			
		RV710	
	701	RV712, RV711	
		RV714, RV713	
		RV716, RV715	
		RV718, RV717	711 710
713 719 712 715 718 714			713
716,717			
Q, IC	D	ADJ	TP

CAMERA(1) CAMERA(1)

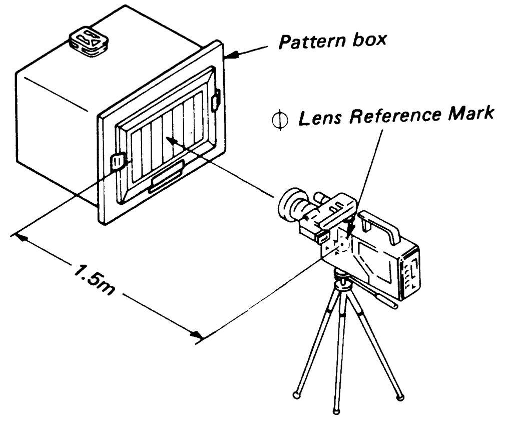
ZM-2 (ZOOM MOTOR DRIVE), RR-9 (SWITCH), CP-11 (CCD IMAGER/VIDEO PROCESS), OS-2 (OSC), VR-9 (VIDEO PROCESS), DR-30 (TIMING GENERATOR), ME-2 (MATRIX/ENCODER), EF-3 (EVF C

– Ref. No. ZM-2, RR-9 BOARD : 1000 series, CP--1, OS-2, VR-9, DR-30 BOARD : 2000 series, ME-2 BOARD : 3000 series, EF-3 BOARD : 5000 series –

Note:

- Caution when replacing tip parts.
  New parts must be attached after removal of tip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the head.
- All resistors are in ohms, 1/10W unless otherwise noted.
- All capacitors are in μF (p:pF) unless otherwise noted.
  50V or less are not indicated except for electrolytic capacitors.
- All variable and semi fixed resistors have characteristic curve B, unless otherwise noted.
- ▭ : panel designation.
- ⊟ : Nonflammable resistor
- —— : B+ bus.
- ▭ : adjustment for repair.
- Voltage and waveform measuring conditions:
  - (1) Sample object: Pattern box color bars.
  - (2) Voltage values: Relative to ground, measured with a DC digital multimeter (impedance 10M-ohm or more).

1. Connection


Pattern box
⌽ Lens Reference Mark
1.5m

2. Adjust the zooming of camera and the tripod so that the output waveform of Fig. a and the picture of Fig. b can be obtain.

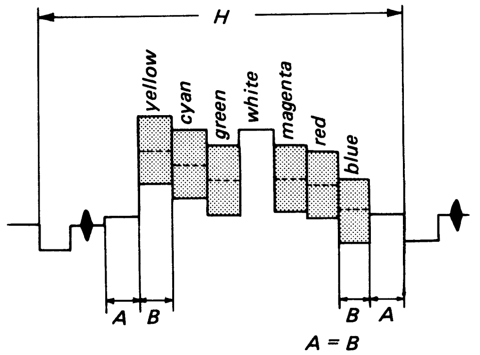

H
yellow
cyan
green
white
magenta
red
blue
A
B
B
A
A = B

Fig. a Camera output waveform of TP711 on ME-2 board

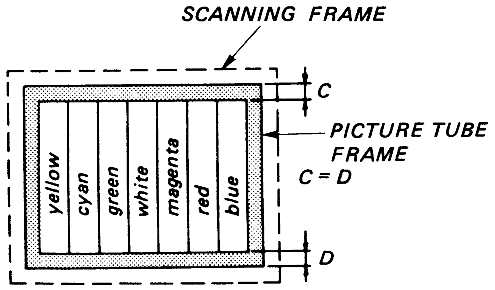
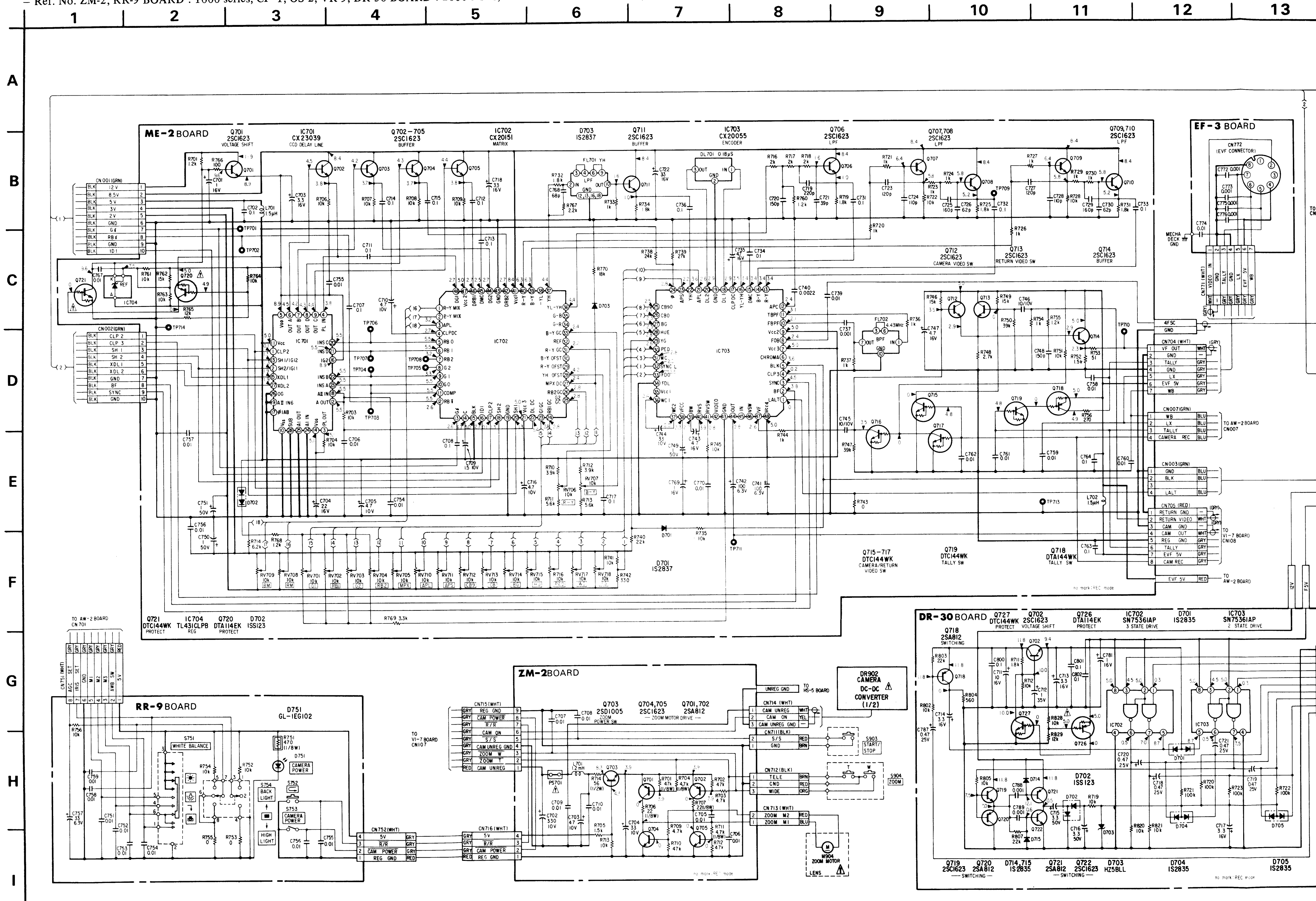

SCANNING FRAME
C
PICTURE TUBE FRAME
C = D
D
yellow
cyan
green
white
magenta
red
blue

Fig. b Picture of TV monitor screen

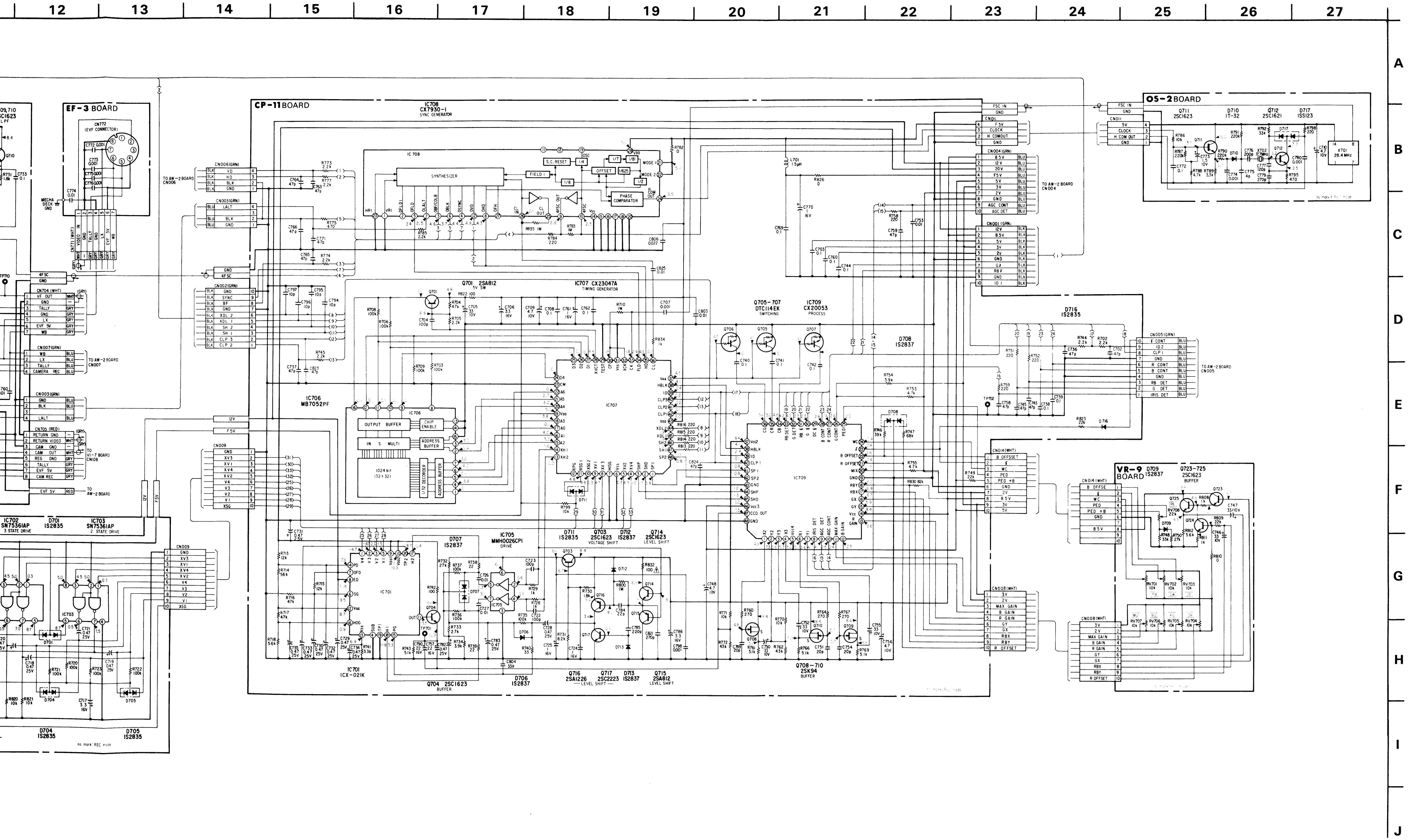

1
2
3
4
5
6
7
8
9
10
11
12
13
A
B
C
D
E
F
G
H
I
J
ME-2 BOARD
Q701 2SC1623 VOLTAGE SHIFT
IC701 CX23039 CCD DELAY LINE
Q702–705 2SC1623 BUFFER
IC702 CX20151 MATRIX
D703 1S2837
Q711 2SC1623 BUFFER
IC703 CX20055 ENCODER
Q706 2SC1623 LPF
Q707,708 2SC1623 LPF
Q709,710 2SC1623 LPF
Q712 2SC1623 CAMERA VIDEO SW
Q713 2SC1623 RETURN VIDEO SW
Q714 2SC1623 BUFFER
Q715–717 DTC144WK CAMERA/RETURN VIDEO SW
Q719 DTC144WK TALLY SW
Q718 DTA144WK TALLY SW
D701 1S2837
Q721 DTC144WK PROTECT
IC704 TL431CLPB REG
Q720 DTA114EK PROTECT
D702 1SS123
TP711
EF-3 BOARD
CN772 (EVF CONNECTOR)
TO AW-2 BOARD CN007
TO VI-7 BOARD CN108
TO AW-2 BOARD
RR-9 BOARD
D751 GL-1EG102
S751 WHITE BALANCE
S754 BACK LIGHT
S752 HIGH LIGHT
S753 CAMERA POWER
ZM-2 BOARD
Q703 2SD1005 CAM POWER SW
Q704,705 2SC1623
Q701,702 2SA812
ZOOM MOTOR DRIVE
TO VI-7 BOARD CN107
TO HS-5 BOARD
DR902 CAMERA DC-DC CONVERTER (1/2)
S903 START/STOP
S904 ZOOM
M904 ZOOM MOTOR
LENS
DR-30 BOARD
Q727 DTC144WK PROTECT
Q702 2SC1623 VOLTAGE SHIFT
Q726 DTA114EK PROTECT
IC702 SN75361AP 3 STATE DRIVE
D701 1S2835
IC703 SN75361AP 2 STATE DRIVE
Q718 2SA812 SWITCHING
Q719 2SC1623
Q720 2SA812
D714,715 1S2835
Q721 2SA812
Q722 2SC1623
D703 HZ5BLL
D704 1S2835
D705 1S2835
SWITCHING

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

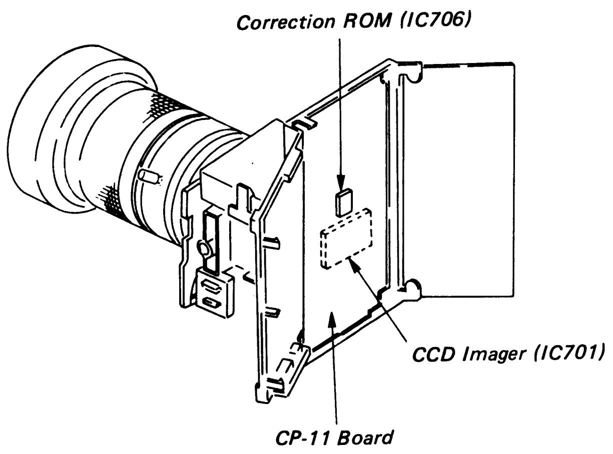
When indicating parts by reference number, please include the board name.

Be sure to read "Precautions for Replacement of CCD Imager Block" on page 95 when changing the mounted CP-9 Board and CCD imager block (IC701 and 706).

TRIX/ENCODER), EF-3 (EVF CONNECTOR) SCHEMATIC DIAGRAM


12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
A
B
C
D
E
F
G
H
I
J
EF-3 BOARD
CN772 (EVF CONNECTOR)
CP-11 BOARD
IC708 CX7930-1 SYNC GENERATOR
SYNTHESIZER
S.C.RESET
FIELD I
OFFSET
PHASE COMPARATOR
Q701 2SA812 5V SW
IC707 CX23047A TIMING GENERATOR
IC706 MB7052PF
OUTPUT BUFFER
CHIP ENABLE
ADDRESS BUFFER
1024 bit (32×32)
Q705–707 DTC114EK SWITCHING
IC709 CX20053 PROCESS
D708 1S2837
D716 1S2835
OS-2 BOARD
Q711 2SC1623
D710 1T-32
Q712 2SC1621
D717 1SS123
X701 28.4 MHz
CN011
CN004 (GRN)
CN001 (GRN)
CN005 (GRN)
TO AW-2 BOARD CN004
TO AW-2 BOARD CN005
TO AW-2 BOARD CN006
TO AW-2 BOARD CN007
TO VI-7 BOARD CN108
TO AW-2 BOARD
CN014 (WHT)
CN008 (WHT)
VR-9 BOARD
D709 1S2837
Q723–725 2SC1623 BUFFER
IC702 SN75361AP 3 STATE DRIVE
D701 1S2835
IC703 SN75361AP 2 STATE DRIVE
D704 1S2835
D705 1S2835
IC701 ICX-021K
D707 1S2837
IC705 MMH0026CP1 DRIVE
D711 1S2835
Q703 2SC1623 VOLTAGE SHIFT
D712 1S2837
Q714 2SC1623 LEVEL SHIFT
Q704 2SC1623 BUFFER
D706 1S2837
Q716 2SA1226
Q717 2SC2223
D713 1S2837
Q715 2SA812 LEVEL SHIFT
Q708–710 2SK94 BUFFER
no mark: REC mode

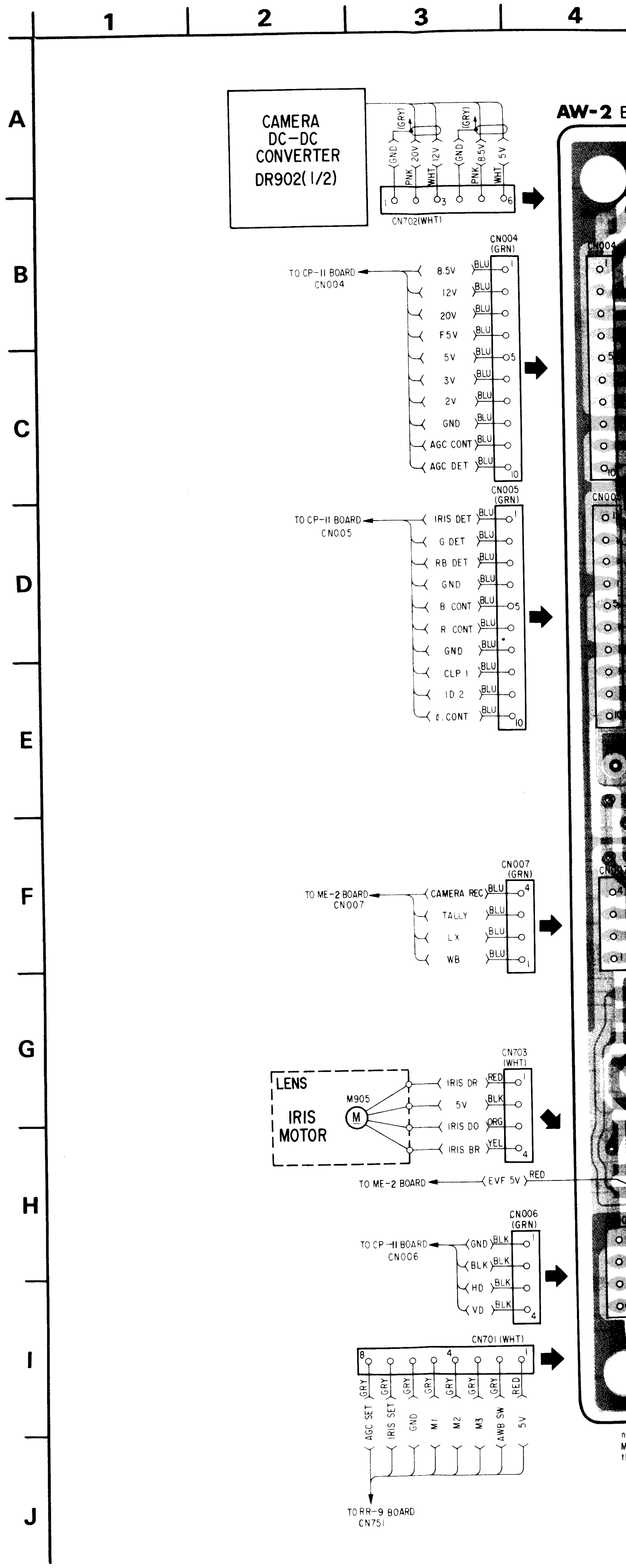
- **Precautions for replacement of CCD imager block**
- The CCD imager block (IC701, IC706) mounted on the CP-11 board is a pair of a CCD imager and a correction ROM* to optimize its characteristics.
  This correction ROM is manufactured to match the pair CCD imager, and the CCD imager only, or the correction ROM only, cannot be exchanged.
  * Some models which do not require any correction are not mounted with a correction ROM.
- The CCD imager supplied as a service part is divided into two types depending on the characteristics. Take the following steps after examining the service set.
  (1) A CCD imager and correction ROM are supplied together:
  Replace the CCD imager and correction ROM simultaneously. Mount the supplied correction ROM when a correction ROM is not mounted in the service set.
  (2) A CCD imager only is supplied:
  This CCD imager requires no correction. Remove any correction ROM mounted in the service set and replace the CCD imager only.
- A CCD imager block (IC701, IC706) is not mounted on the mounted CP-11 board suplied as a service part.
  Remove the CCD imager block from the previous board and remount it on the new board when repairing or exchanging the CP-11 board.
- Adjust the entire camera section when the CCD imager block is exchanged.


Correction ROM (IC706)
CCD Imager (IC701)
CP-11 Board

CCD Imager Block

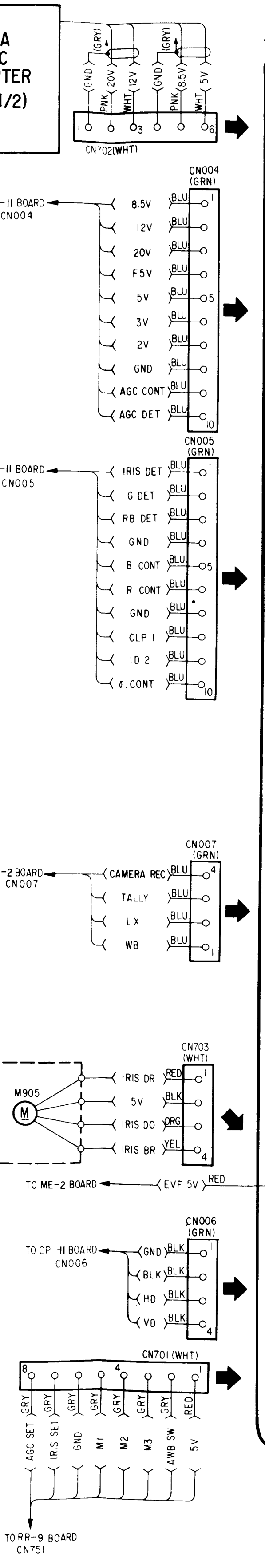
4-3. AW-2 (AUTO WHITE BALANCE) PRINTED WIRING BOA

– Ref. No. AW-2 BOARD : 4000 series –

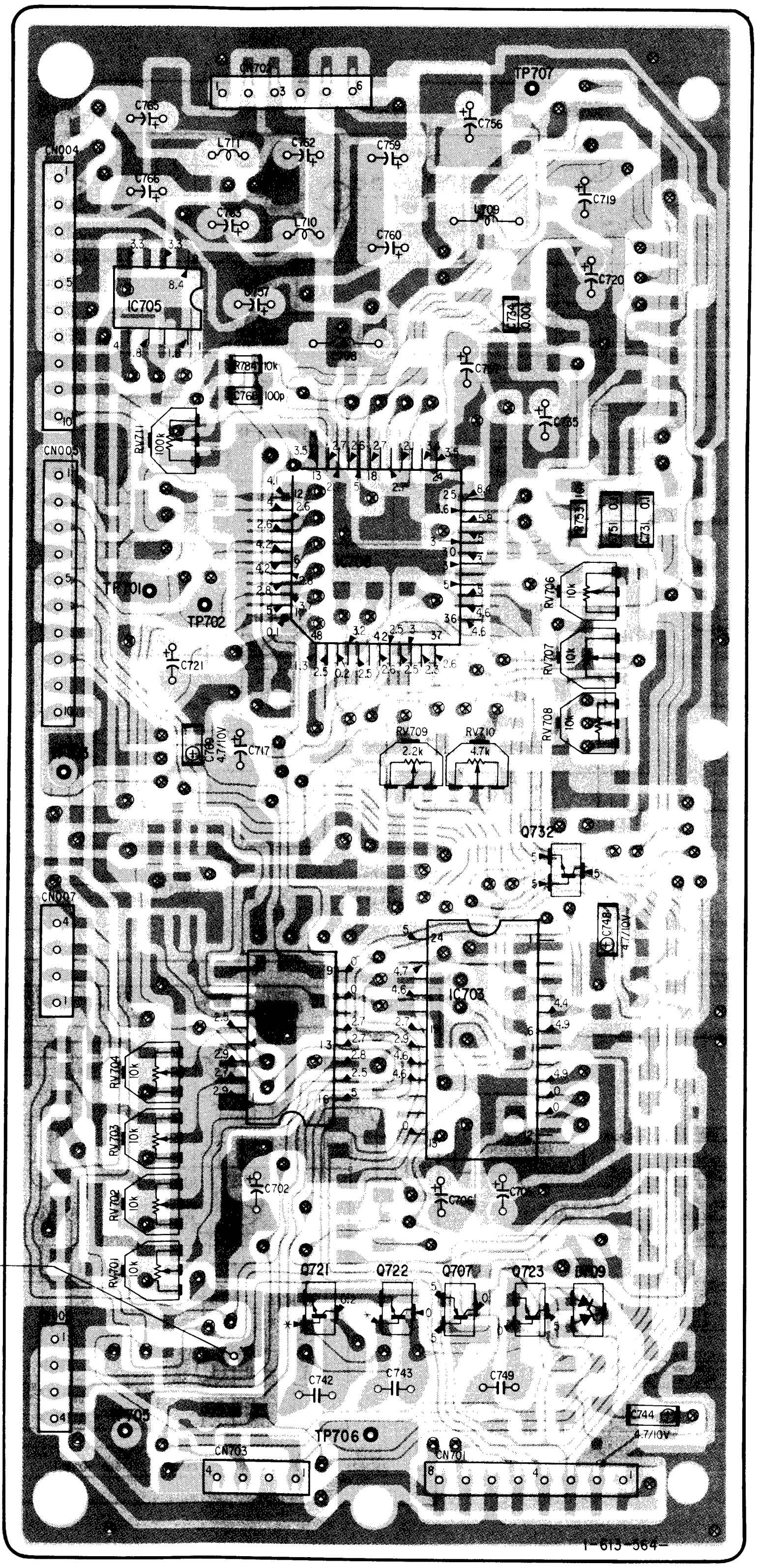

1
2
3
4
A
B
C
D
E
F
G
H
I
J
CAMERA DC-DC CONVERTER DR902(1/2)
CN702(WHT)
AW-2
CN004 (GRN)
TO CP-11 BOARD CN004
8.5V
12V
20V
F5V
5V
3V
2V
GND
AGC CONT
AGC DET
CN005 (GRN)
TO CP-11 BOARD CN005
IRIS DET
G DET
RB DET
GND
B CONT
R CONT
GND
CLP 1
ID 2
Σ CONT
CN007 (GRN)
TO ME-2 BOARD CN007
CAMERA REC
TALLY
LX
WB
CN703 (WHT)
LENS
IRIS MOTOR
M905
IRIS DR
5V
IRIS DO
IRIS BR
TO ME-2 BOARD
EVF 5V
CN006 (GRN)
TO CP-11 BOARD CN006
GND
BLK
HD
VD
CN701 (WHT)
AGC SET
IRIS SET
GND
M1
M2
M3
AWB SW
5V
TO RR-9 BOARD CN751

ALANCE) PRINTED WIRING BOARD

000 series –


A
C
TER
1/2)
GND
GRY
PNK 20V
WHT 12V
GND
GRY
PNK 8.5V
WHT 5V
CN702(WHT)
-II BOARD
CN004
CN004 (GRN)
8.5V
12V
20V
F5V
5V
3V
2V
GND
AGC CONT
AGC DET
BLU
-II BOARD
CN005
CN005 (GRN)
IRIS DET
G DET
RB DET
GND
B CONT
R CONT
GND
CLP 1
ID 2
σ.CONT
-2 BOARD
CN007
CN007 (GRN)
CAMERA REC
TALLY
LX
WB
M905
CN703 (WHT)
IRIS DR
5V
IRIS DO
IRIS BR
RED
BLK
ORG
YEL
TO ME-2 BOARD
EVF 5V
TO CP-II BOARD
CN006
CN006 (GRN)
GND
BLK
HD
VD
CN701 (WHT)
AGC SET
IRIS SET
GND
M1
M2
M3
AWB SW
5V
GRY
TO RR-9 BOARD
CN751

AW-2 BOARD (COMPONENT SIDE)

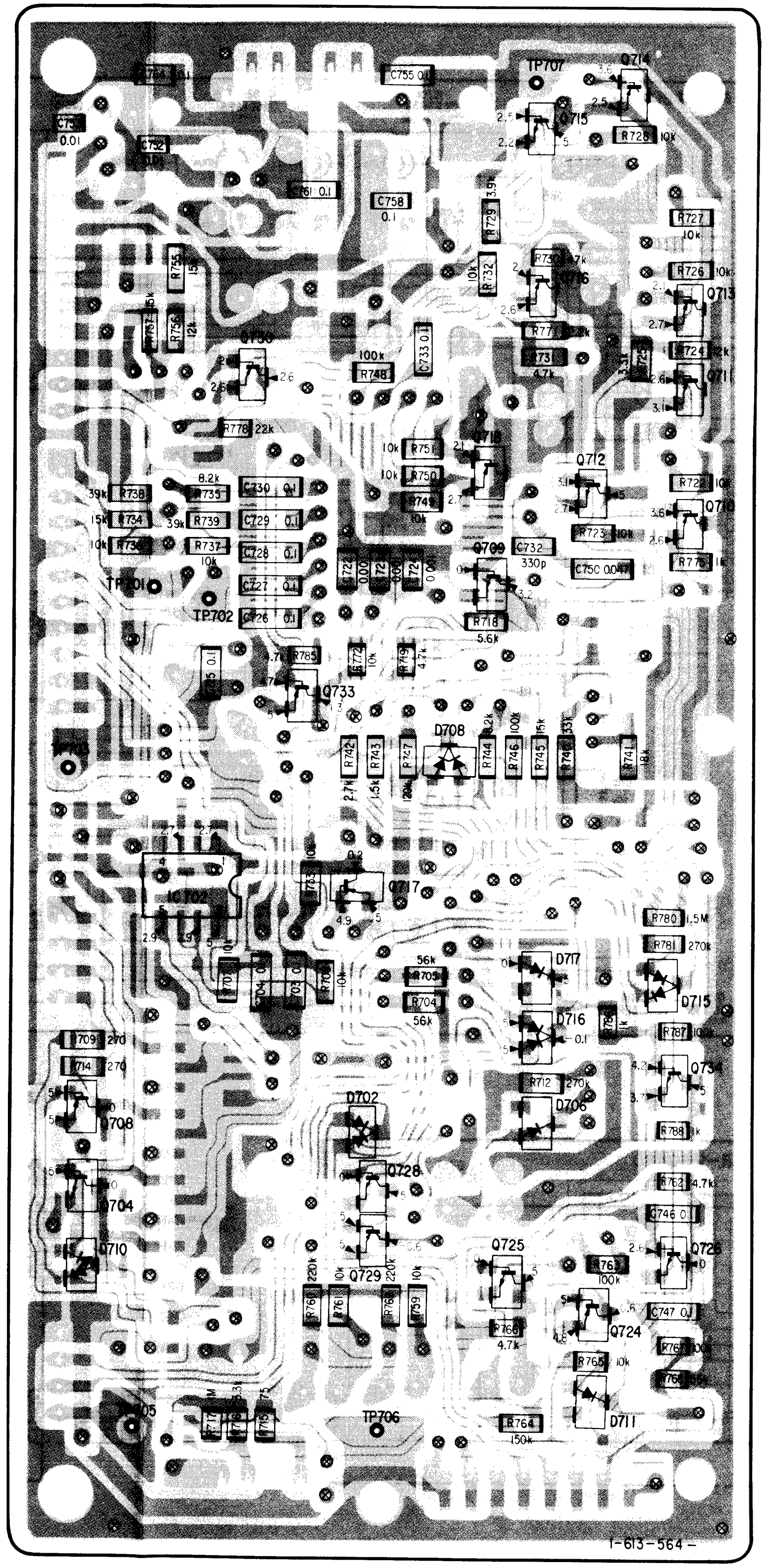

CN004
CN005
CN007
CN006
CN703
CN701
CN702
IC705
IC702
IC703
IC701
IC706
TP701
TP702
TP706
TP707
RV701
RV702
RV703
RV704
RV706
RV707
RV708
RV709
RV710
RV711
Q721
Q722
Q707
Q723
Q732
D709
1-613-564-

no mark : REC mode
Marked ✳ is not able to measure the voltage of it's position.

12

Q, IC	D	ADJ	TP
			707
714			
715			
IC705 716 713			
730 711			
		RV711	
718			
712			
710			
IC706 709		RV706	701
			702
		RV707	
733		RV708	
	708	RV709,RV710	703
732			
IC702 717			
	717 715		
IC701,IC703	716		
734		RV704	
708	706 702	RV703	
704 728		RV702	
729			
726 725	710	RV701	
721,722,707,723,724	709		
	711		
			705 706
Q, IC	D	ADJ	TP

AW-2 BOARD (SOLDER SIDE)


TP707
TP701
TP702
TP706
Q714
Q715
Q716
Q713
Q711
Q730
Q712
Q710
Q709
Q733
D708
Q717
D717
D716
D715
D702
Q706
Q734
Q708
Q704
Q710
Q728
Q729
Q725
Q724
Q726
D711
1-613-564-

12

no mark : REC mode

Note:

- ⊗ : Through hole.
- ▨ : soldering side
- : B+ pattern
- : component side

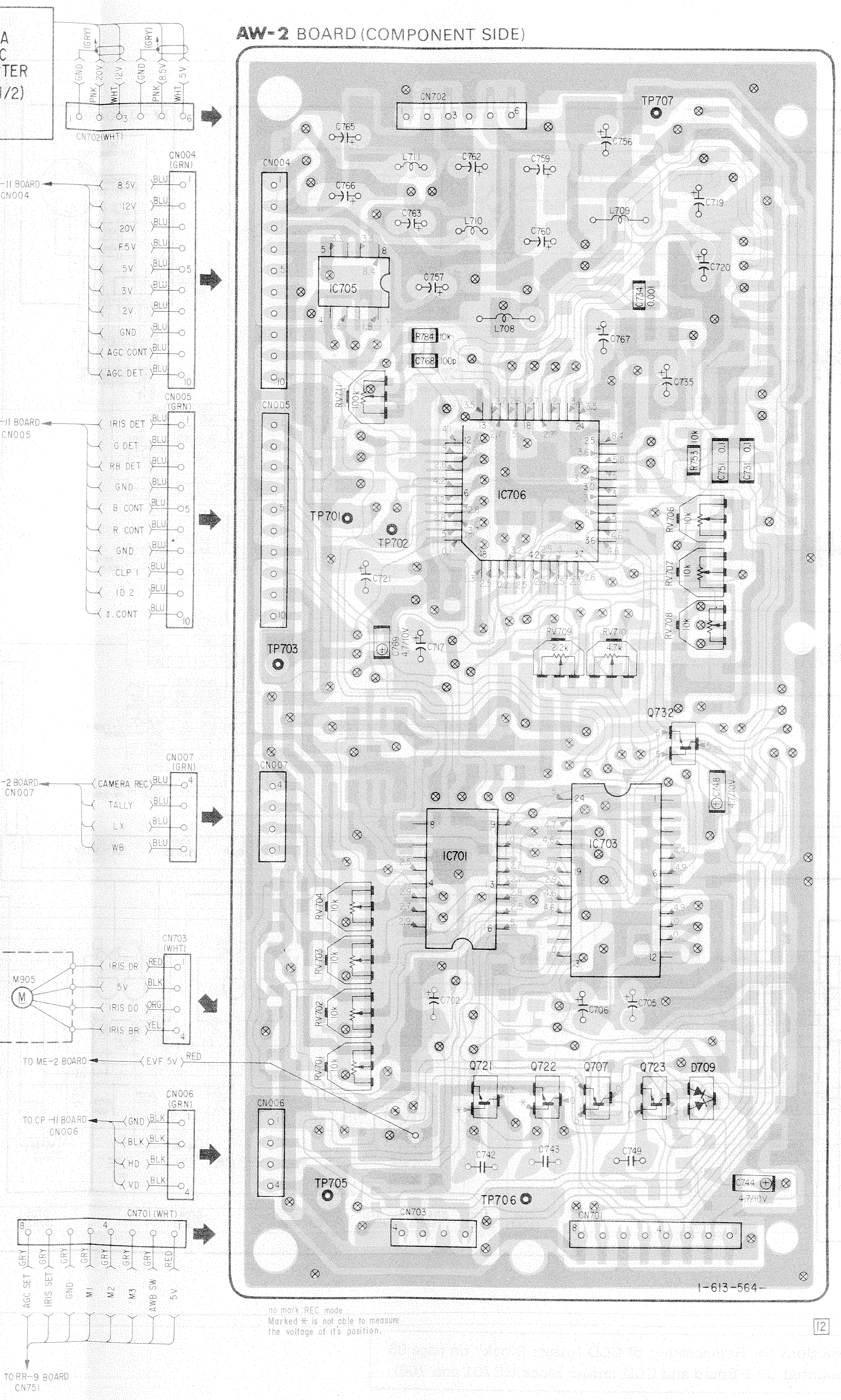
When indicating parts by reference number, please include the board name.

Caution:

Pattern face side: (Solder Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the pattern face are indicated.

ALANCE) PRINTED WIRING BOARD
000 series –

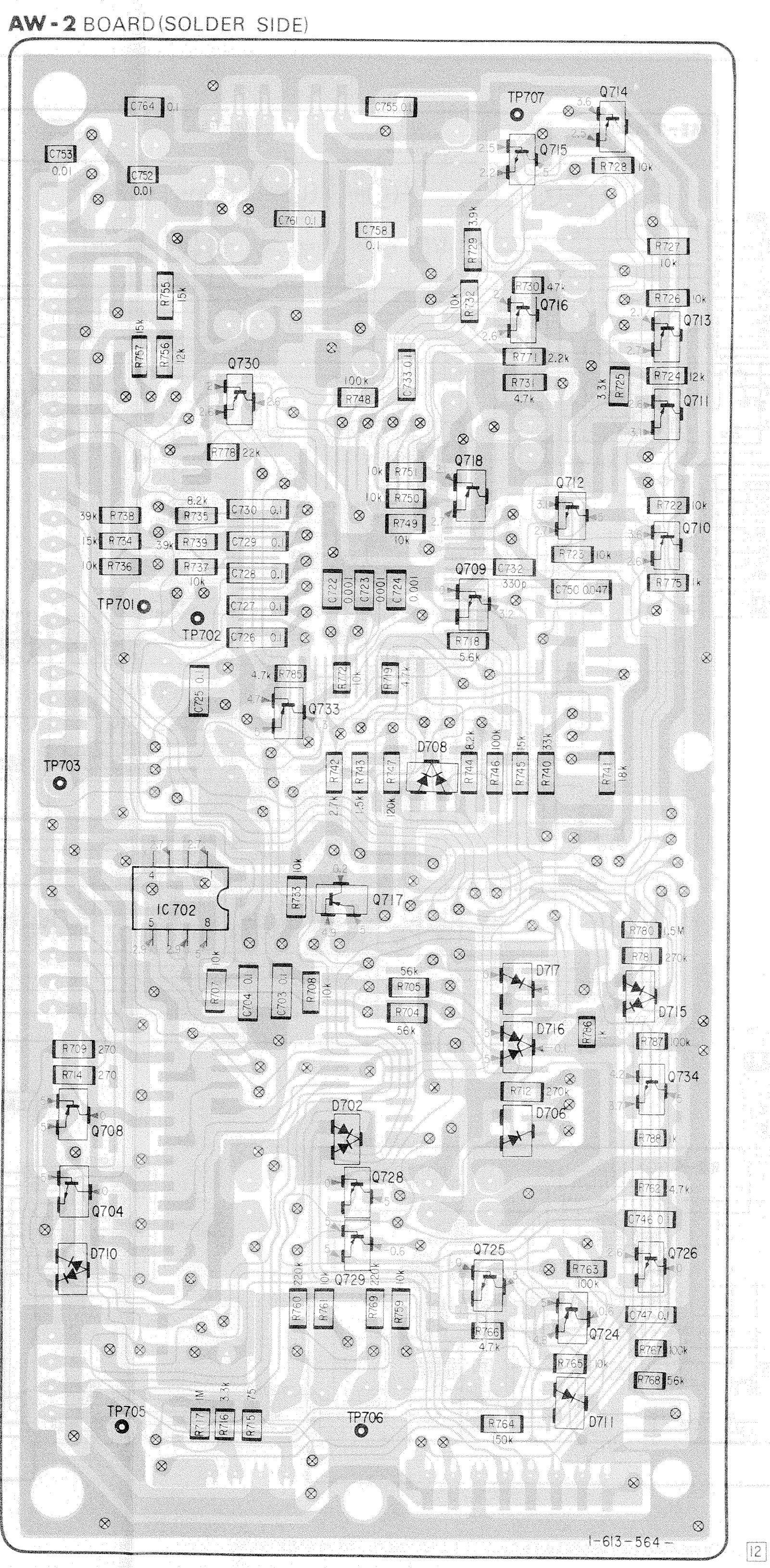
AW-2 BOARD (COMPONENT SIDE)


CN702(WHT)
CN004 (GRN)
CN005 (GRN)
CN007 (GRN)
CN703 (WHT)
CN006 (GRN)
CN701 (WHT)
8.5V
12V
20V
F5V
5V
3V
2V
GND
AGC CONT
AGC DET
IRIS DET
G DET
RB DET
B CONT
R CONT
CLP I
ID 2
I. CONT
CAMERA REC
TALLY
LX
WB
M905
IRIS DR
IRIS DO
IRIS BR
TO ME-2 BOARD
EVF 5V
TO CP-11 BOARD CN006
HD
VD
AGC SET
IRIS SET
M1
M2
M3
AWB SW
TO RR-9 BOARD CN751
IC701
IC703
IC705
IC706
TP701
TP702
TP703
TP705
TP706
TP707
RV701
RV702
RV703
RV704
RV706
RV707
RV708
RV709
RV710
Q721
Q722
Q707
Q723
D709
Q732
1-613-564-
12

no mark: REC mode
Marked * is not able to measure the voltage of it's position.

Q, IC	D	ADJ	TP
			707
714			
715			
IC705 716			
713			
730 711			
		RV711	
718			
712			
710			
IC706			
709		RV706	701
			702
		RV707	
733		RV708	
	708	RV709,RV710	703
732			
IC702 717			
	717		
	715		
IC701,IC703	716		
734		RV704	
708	706		
	702	RV703	
704 728		RV702	
729			
726	710	RV701	
725			
721,722,707,723,724	709		
	711		
			705
			706
Q, IC	D	ADJ	TP

AW-2 BOARD (SOLDER SIDE)


IC702
TP701
TP702
TP703
TP705
TP706
TP707
Q704
Q706
Q708
Q709
Q710
Q711
Q712
Q713
Q714
Q715
Q716
Q717
Q718
Q724
Q725
Q726
Q728
Q729
Q730
Q733
Q734
D702
D708
D710
D711
D715
D716
D717
no mark: REC mode
1-613-564-
12

Note:

- ⊗ : Through hole.
- ▨ : soldering side
- ▨ : B+ pattern
- ▨ : component side

When indicating parts by reference number, please include the board name.

Caution:

Pattern face side: (Solder Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the pattern face are indicated.

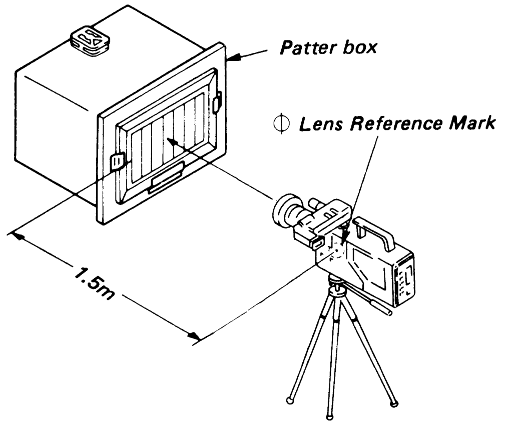
AW-2 (AUTO WHITE BALANCE) SCHEMATIC DIAGRAM

– Ref. No. AW-2 BOARD : 4000 series –

Note:

- Caution when replacing tip parts.
  New parts must be attached after removal of tip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the head.
- All resistors are in ohms, 1/10W unless otherwise noted.
- All capacitors are in μF (p:pF) unless otherwise noted.
  50V or less are not indicated except for electrolytic capacitors.
- All variable and semi fixed resistors have characteristic curve B, unless otherwise noted.
- ▭ : panel designation.
- ▭ : Nonflammable resistor
- —— : B+ bus.
- ▭ : adjustment for repair.
- Voltage and waveform measuring conditions:
  (1) Sample object: Pattern box color bars.
  (2) Voltage values: Relative to ground, measured with a DC digital multimeter (impedance 10M-ohm or more).

1. Connection


Patter box
⌽ Lens Reference Mark
1.5m

2. Adjust the zooming of camera and the tripod so that the output waveform of Fig. a and the picture of Fig. b can be obtain.

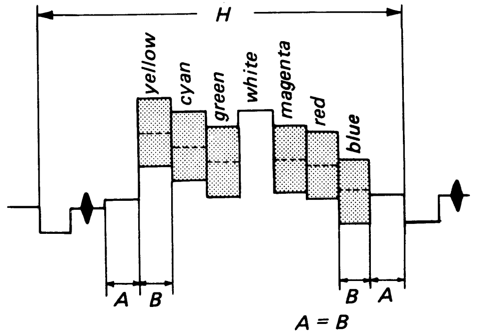

H
yellow
cyan
green
white
magenta
red
blue
A
B
B
A
A = B

Fig. a Camera output waveform of TP711 on ME-2 board

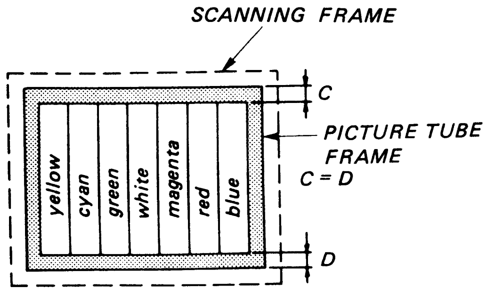
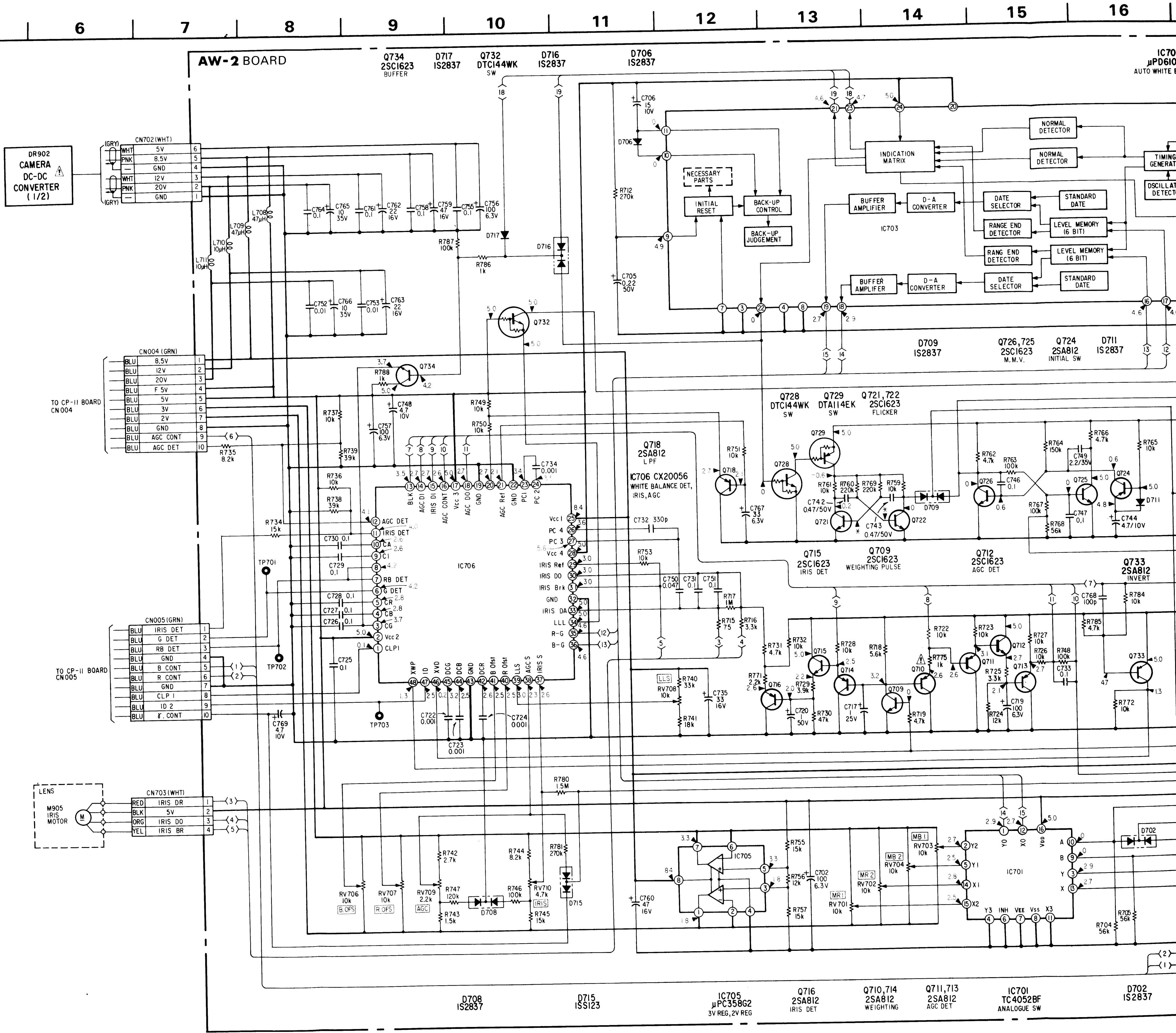
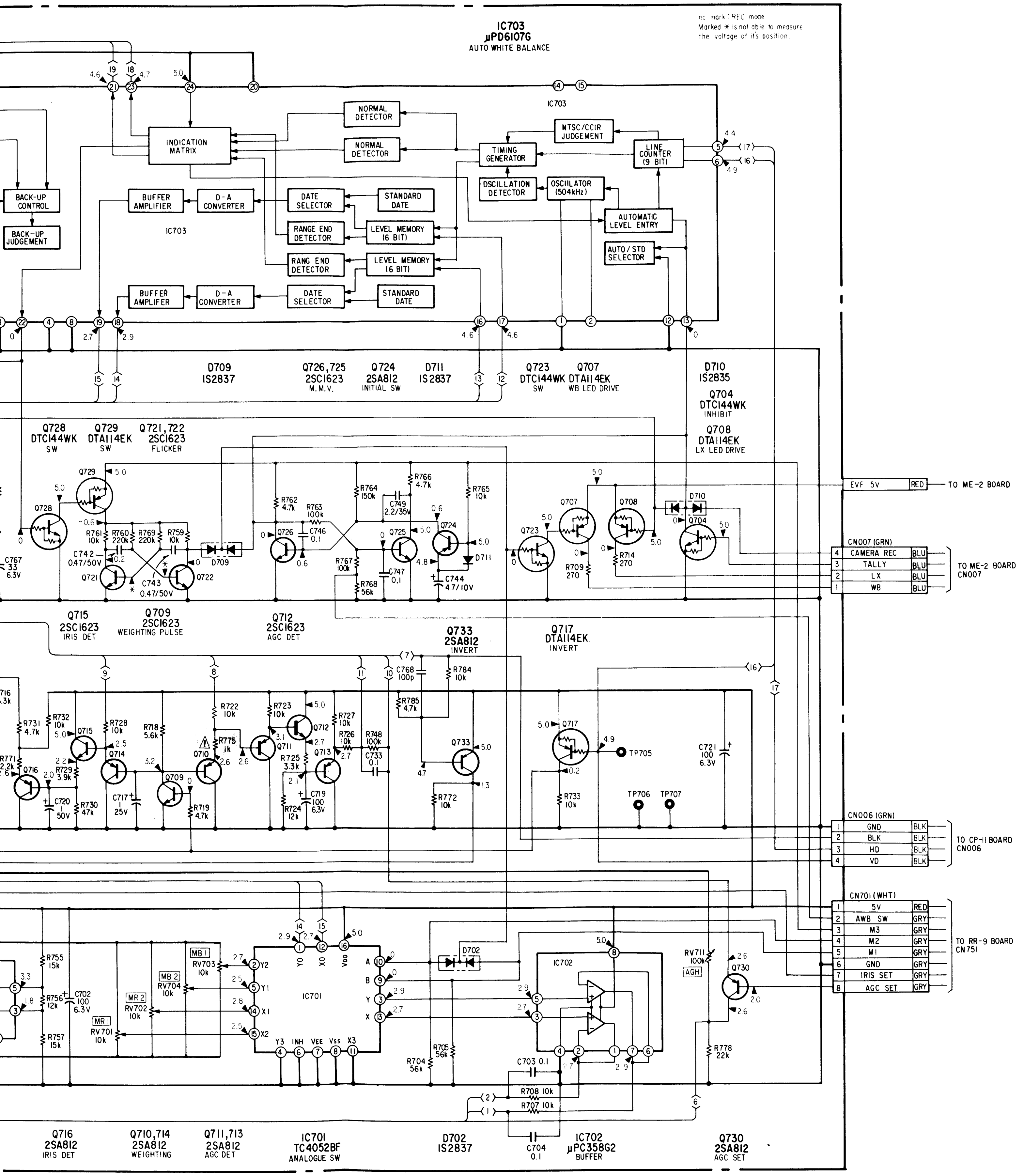

SCANNING FRAME
C
PICTURE TUBE FRAME
C = D
D
yellow
cyan
green
white
magenta
red
blue

Fig. b Picture of TV monitor screen

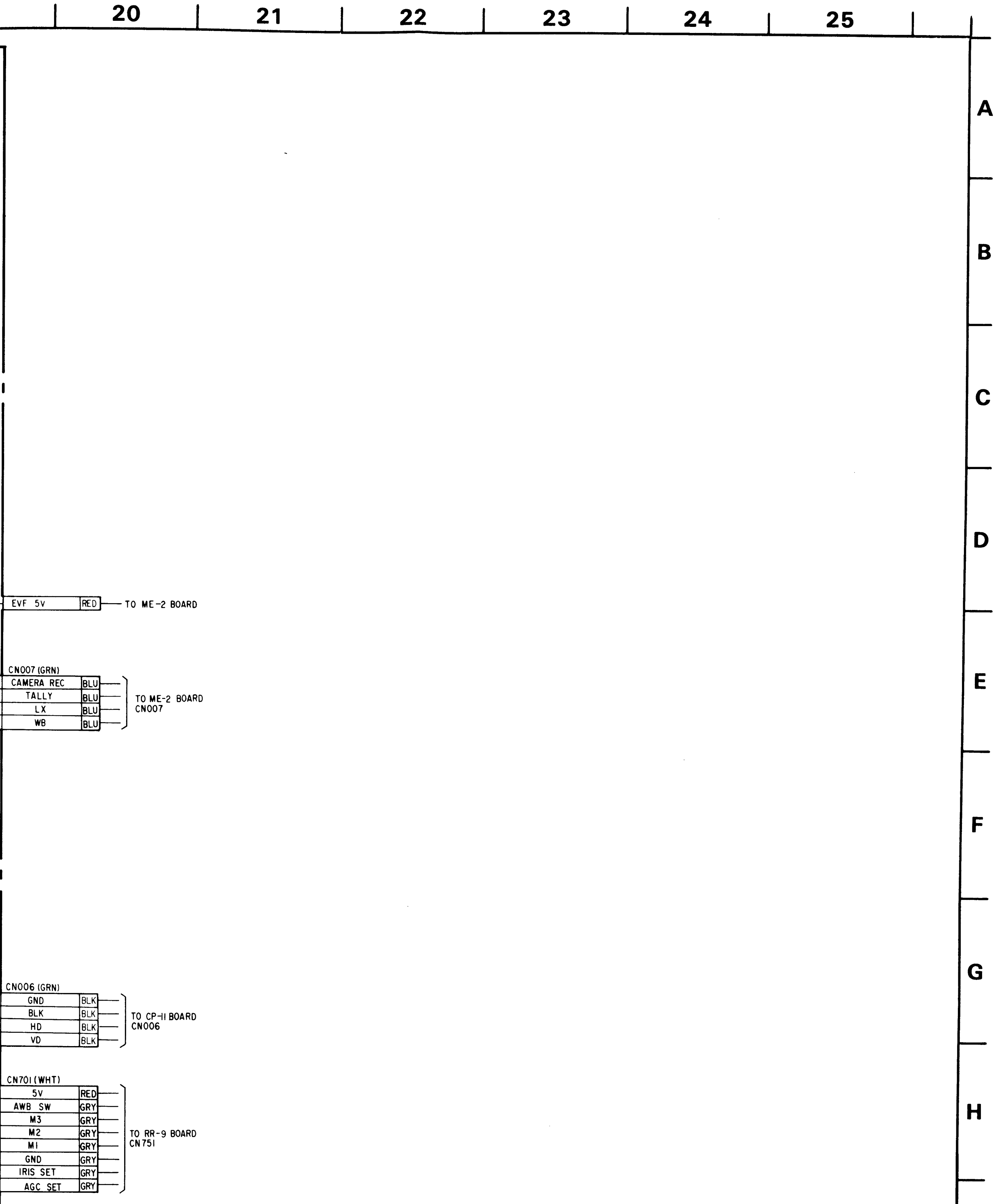

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H I J
AW-2 BOARD
DR902 CAMERA DC-DC CONVERTER (1/2)
CN702 (WHT)
5V
8.5V
GND
12V
20V
GND
TO CP-11 BOARD CN004
CN004 (GRN)
8.5V
12V
20V
F 5V
5V
3V
2V
GND
AGC CONT
AGC DET
TO CP-11 BOARD CN005
CN005 (GRN)
IRIS DET
G DET
RB DET
GND
B CONT
R CONT
GND
CLP I
ID 2
γ. CONT
LENS
M905 IRIS MOTOR
CN703 (WHT)
IRIS DR
5V
IRIS DO
IRIS BR
Q734 2SC1623 BUFFER
D717 1S2837
Q732 DTC144WK SW
D716 1S2837
D706 1S2837
IC70_ μPD610_ AUTO WHITE B
IC706 CX20056 WHITE BALANCE DET, IRIS, AGC
IC703
INDICATION MATRIX
NORMAL DETECTOR
NECESSARY PARTS
INITIAL RESET
BACK-UP CONTROL
BACK-UP JUDGEMENT
BUFFER AMPLIFIER
D-A CONVERTER
DATE SELECTOR
STANDARD DATE
RANGE END DETECTOR
LEVEL MEMORY (6 BIT)
TIMING GENERAT
OSCILLAT DETECT
Q718 2SA812 LPF
D709 1S2837
Q726,725 2SC1623 M.M.V.
Q724 2SA812 INITIAL SW
D711 1S2837
Q728 DTC144WK SW
Q729 DTA114EK SW
Q721,722 2SC1623 FLICKER
Q715 2SC1623 IRIS DET
Q709 2SC1623 WEIGHTING PULSE
Q712 2SC1623 AGC DET
Q733 2SA812 INVERT
IC705 μPC358G2 3V REG, 2V REG
IC701 TC4052BF ANALOGUE SW
TP701
TP702
TP703
B OFS
R OFS
AGC
IRIS
MB 1
MB 2
MR 2
MR 1
D708 1S2837
D715 1SS123
Q716 2SA812 IRIS DET
Q710,714 2SA812 WEIGHTING
Q711,713 2SA812 AGC DET
D702 1S2837


IC703
μPD6107G
AUTO WHITE BALANCE
no mark : REC mode
Marked ✱ is not able to measure the voltage of it's position.
INDICATION MATRIX
NORMAL DETECTOR
NORMAL DETECTOR
TIMING GENERATOR
NTSC/CCIR JUDGEMENT
LINE COUNTER (9 BIT)
OSCILLATION DETECTOR
OSCILATOR (504kHz)
AUTOMATIC LEVEL ENTRY
AUTO/STD SELECTOR
BACK-UP CONTROL
BACK-UP JUDGEMENT
BUFFER AMPLIFIER
D-A CONVERTER
DATE SELECTOR
STANDARD DATE
RANGE END DETECTOR
LEVEL MEMORY (6 BIT)
RANG END DETECTOR
LEVEL MEMORY (6 BIT)
BUFFER AMPLIFIER
D-A CONVERTER
DATE SELECTOR
STANDARD DATE
IC703
D709 1S2837
Q726,725 2SC1623 M.M.V.
Q724 2SA812 INITIAL SW
D711 1S2837
Q723 DTC144WK SW
Q707 DTA114EK WB LED DRIVE
D710 1S2835
Q704 DTC144WK INHIBIT
Q708 DTA114EK LX LED DRIVE
Q728 DTC144WK SW
Q729 DTA114EK SW
Q721,722 2SC1623 FLICKER
Q715 2SC1623 IRIS DET
Q709 2SC1623 WEIGHTING PULSE
Q712 2SC1623 AGC DET
Q733 2SA812 INVERT
Q717 DTA114EK INVERT
EVF 5V RED TO ME-2 BOARD
CN007 (GRN)
4 CAMERA REC BLU
3 TALLY BLU
2 LX BLU
1 WB BLU
TO ME-2 BOARD CN007
TP705
TP706 TP707
CN006 (GRN)
1 GND BLK
2 BLK BLK
3 HD BLK
4 VD BLK
TO CP-11 BOARD CN006
CN701 (WHT)
1 5V RED
2 AWB SW GRY
3 M3 GRY
4 M2 GRY
5 M1 GRY
6 GND GRY
7 IRIS SET GRY
8 AGC SET GRY
TO RR-9 BOARD CN751
IC701
IC702
RV703 10k MB1
RV704 10k MB2
RV702 10k MR2
RV701 10k MR1
RV711 100k AGH
Q716 2SA812 IRIS DET
Q710,714 2SA812 WEIGHTING
Q711,713 2SA812 AGC DET
IC701 TC4052BF ANALOGUE SW
D702 1S2837
C704 0.1
IC702 μPC358G2 BUFFER
Q730 2SA812 AGC SET

A B C D E F G H I J

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

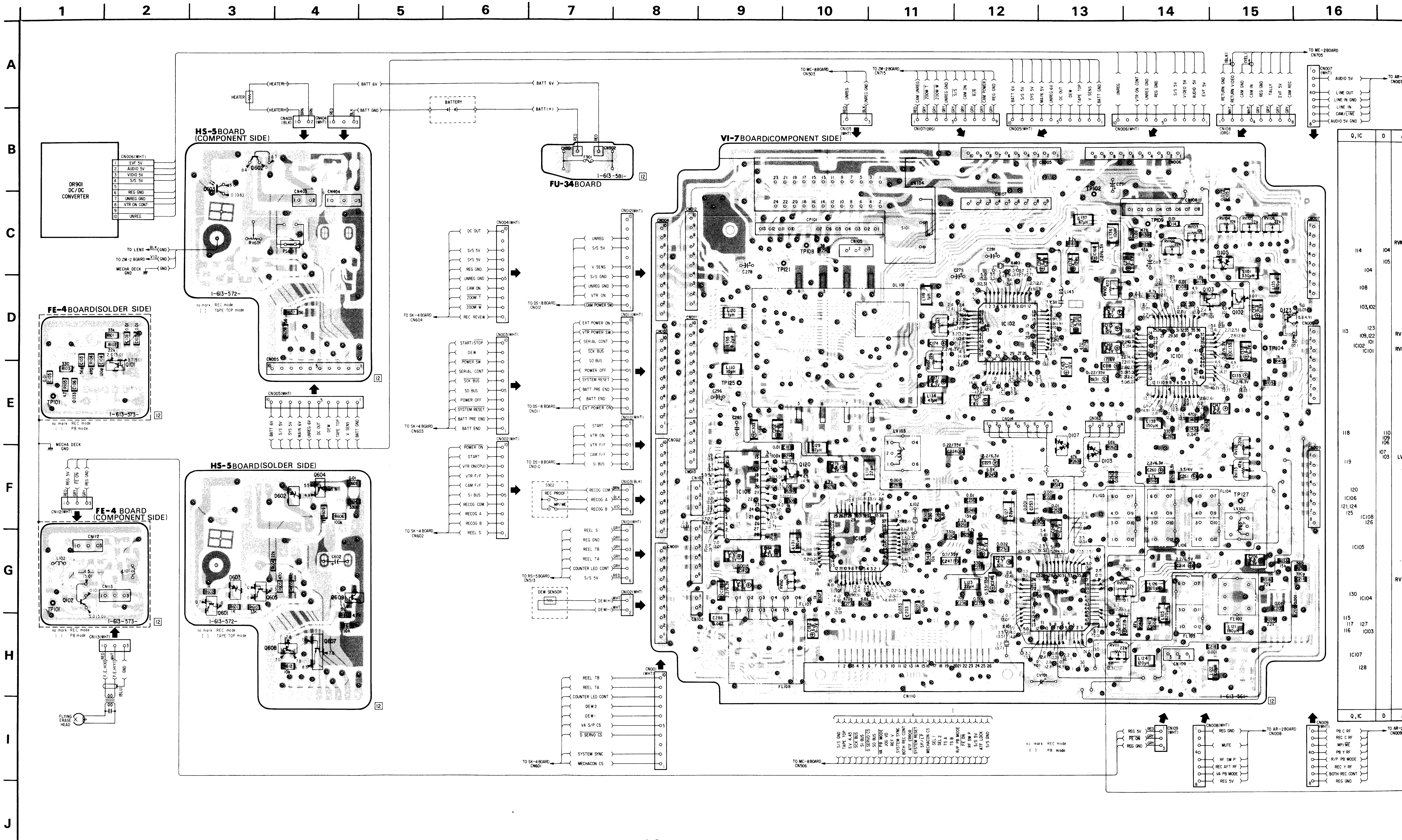

20
21
22
23
24
25
A
B
C
D
E
F
G
H
I
J
EVF 5V
RED
TO ME-2 BOARD
CN007 (GRN)
CAMERA REC
TALLY
LX
WB
BLU
TO ME-2 BOARD
CN007
CN006 (GRN)
GND
BLK
HD
VD
BLK
TO CP-11 BOARD
CN006
CN701 (WHT)
5V
AWB SW
M3
M2
M1
GND
IRIS SET
AGC SET
RED
GRY
TO RR-9 BOARD
CN751

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

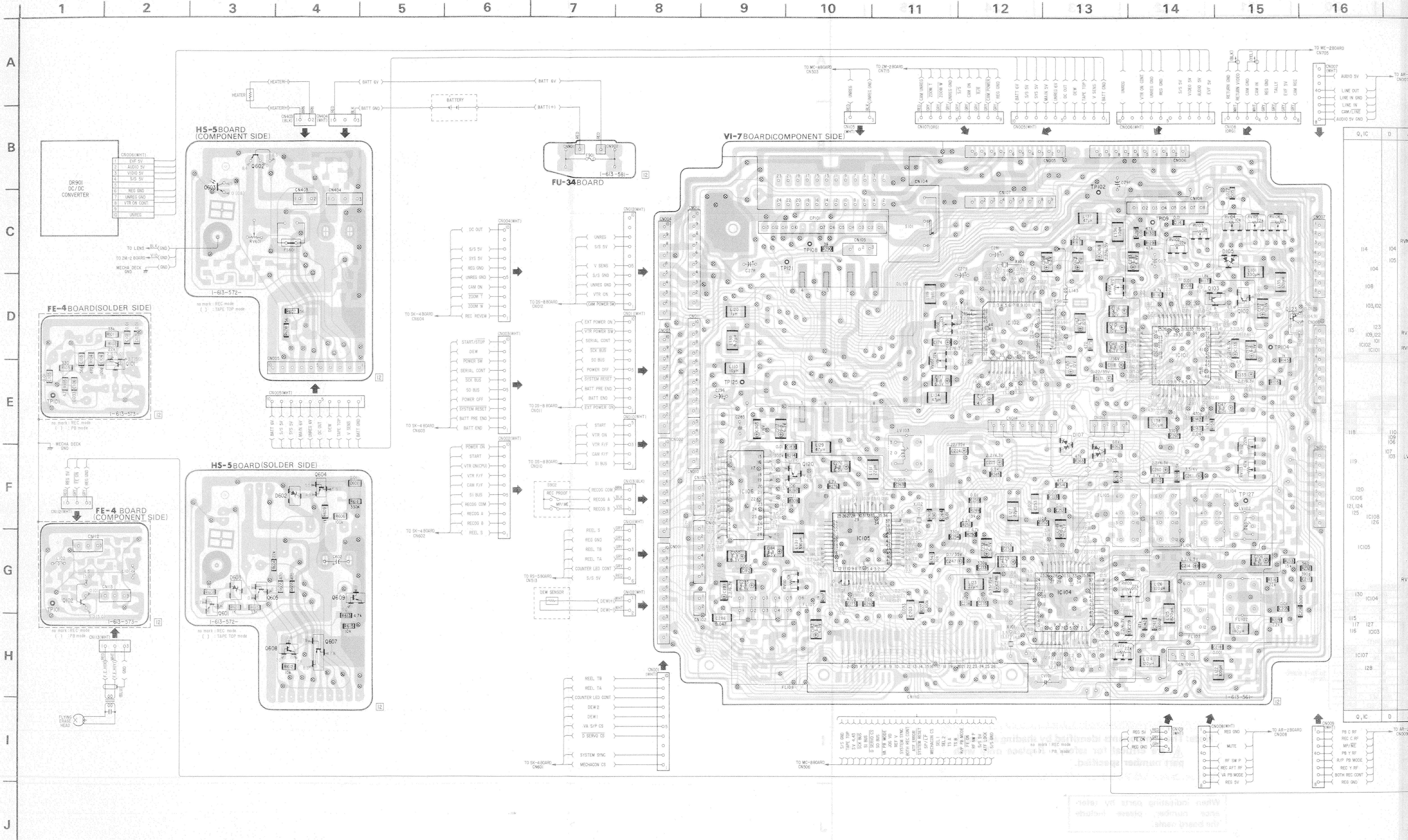
4-4. VI-7 (Y, CHROMA SIGNAL PROCESS), FU-34 (FUSE), HS-5 (TAPE SENSOR/SWITCH), FE-4 (FLYING ERASE), EX-1 (TUNING EXPANDER, EQ) PRINTED WIRING BOARD

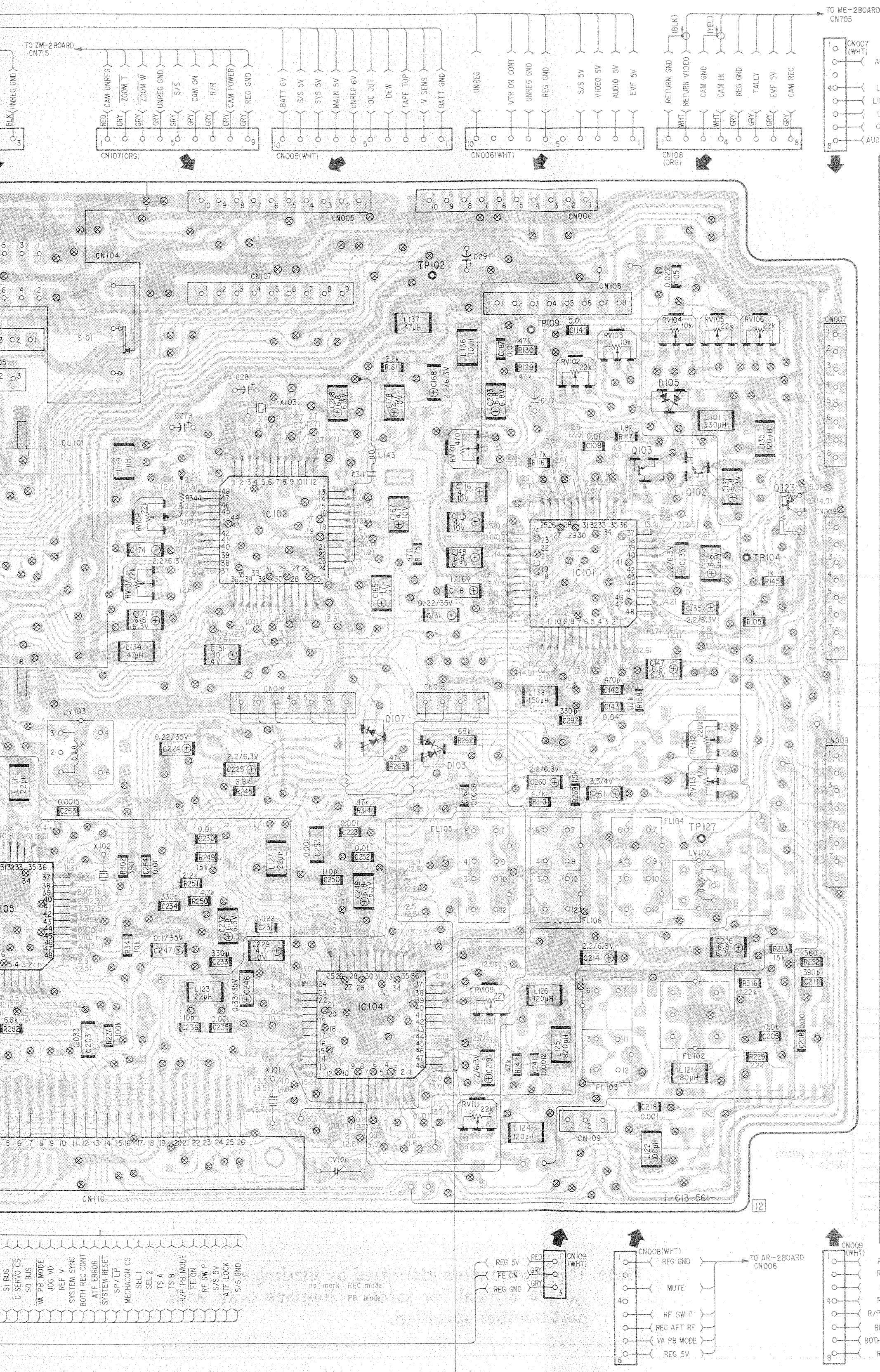
– Ref. No. VI-7, EX-1 BOARD : 1000 series, FU-34 BOARD : 5000 series, HS-5 BOARD : 6000 series. FE-4 BOARD : 8000 series –


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
DR901 DC/DC CONVERTER
CN006(WHT)
EVF 5V
AUDIO 5V
VIDIO 5V
S/S 5V
REG GND
UNREG GND
VTR ON CONT
UNREG
HS-5 BOARD (COMPONENT SIDE)
HS-5 BOARD (SOLDER SIDE)
FE-4 BOARD (SOLDER SIDE)
FE-4 BOARD (COMPONENT SIDE)
FU-34 BOARD
VI-7 BOARD (COMPONENT SIDE)
HEATER
BATT 6V
BATT GND
BATTERY
BATT(+)
TO LENS
TO ZM-2 BOARD
MECHA DECK GND
FLYING ERASE HEAD
1-613-572-
1-613-573-
1-613-581-
1-613-561-
no mark : REC mode
( ) : PB mode
[ ] : TAPE TOP mode
TO SK-4 BOARD CN604
TO SK-4 BOARD CN603
TO SK-4 BOARD CN602
TO SK-4 BOARD CN601
TO DS-8 BOARD CN012
TO DS-8 BOARD CN011
TO DS-8 BOARD CN010
TO RS-5 BOARD CN513
DEW SENSOR
REC PROOF
TO MC-8 BOARD CN503
TO ZM-2 BOARD CN715
TO ME-28 BOARD CN705
TO MC-8 BOARD CN506
TO AR-2 BOARD CN008
IC101
IC102
IC105
IC106
CN110
Q, IC
D

4-4. VI-7 (Y, CHROMA SIGNAL PROCESS), FU-34 (FUSE), HS-5 (TAPE SENSOR/SWITCH), FE-4 (FLYING ERASE), EX-1 (TUNING EXPANDER, EQ) PRINTED WIRING BOARD

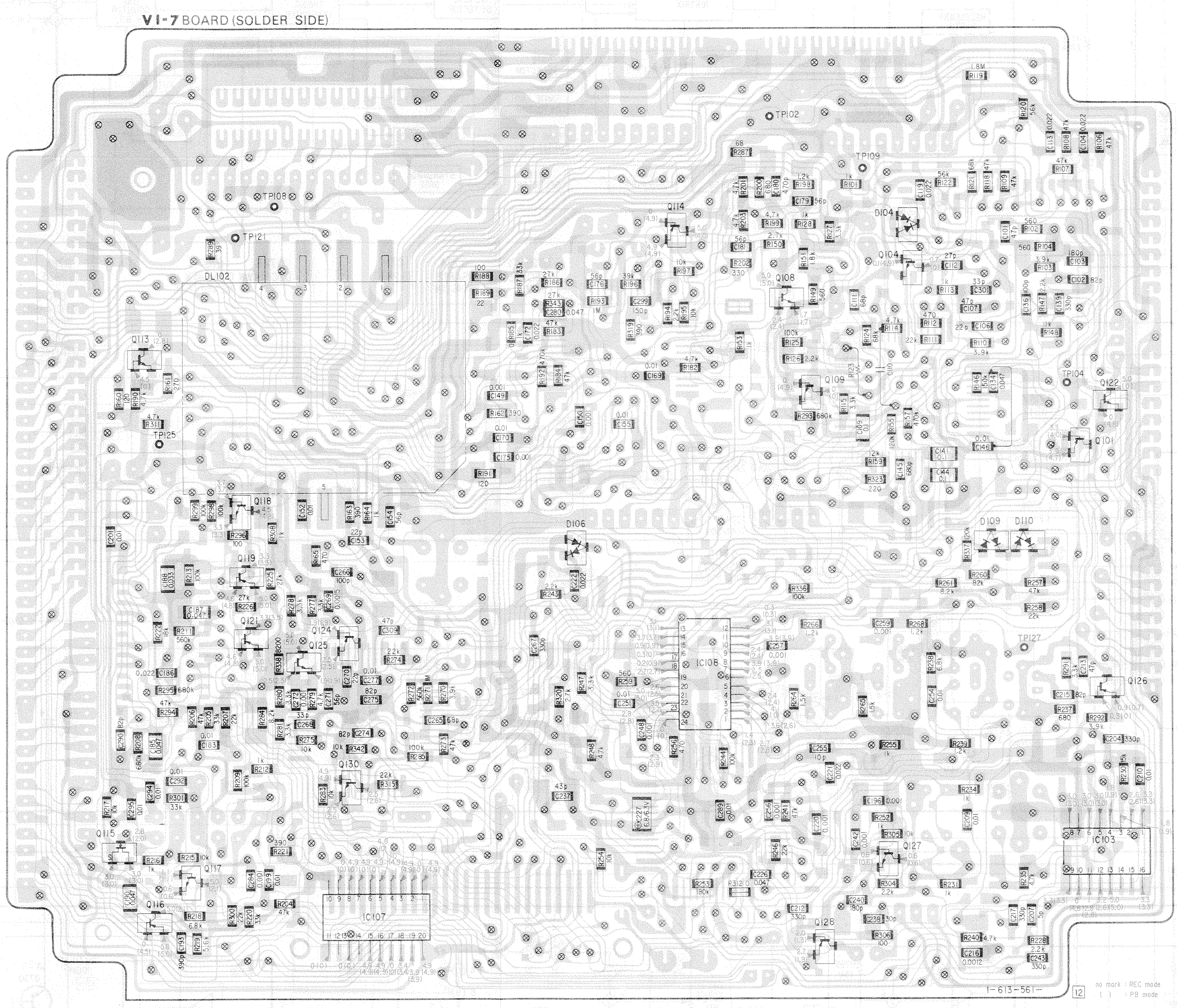
– Ref. No. VI-7, EX-1 BOARD : 1000 series, FU-34 BOARD : 5000 series, HS-5 BOARD : 6000 series. FE-4 BOARD : 8000 series –


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
DR901 DC/DC CONVERTER
CN006(WHT)
EVF 5V
AUDIO 5V
VIDEO 5V
S/S 5V
REG GND
UNREG GND
VTR ON CONT
UNREG
HEATER
HEATER(-)
HEATER(+)
BATT 6V
BATT GND
BATTERY
BATT(+)
CN403 (BLK)
CN404 (WHT)
HS-5 BOARD (COMPONENT SIDE)
Q602
Q603
CN403
CN404
RV601
PS601
CN005
1-613-572-
no mark : REC mode
( ) : TAPE TOP mode
CN005(WHT)
BATT 6V
S/S 5V
SYS 5V
MAIN 6V
UNREG 6V
DC OUT
DEW
TAPE TOP
V SENS
REG GND
TO LENS
TO ZM-2 BOARD
MECHA DECK GND
FE-4 BOARD (SOLDER SIDE)
Q101
TP101
1-613-573-
no mark : REC mode
( ) : PB mode
FE-4 BOARD (COMPONENT SIDE)
CN112(WHT)
REG 5V
FE ON
REG GND
CN112
CN113
Q102
CN113(WHT)
FLYING ERASE HEAD
HS-5 BOARD (SOLDER SIDE)
Q604
Q602
Q603
Q605
Q601
Q609
Q607
Q608
FU-34 BOARD
CN901
CN902
F901
1-613-581-
CN004(WHT)
DC OUT
S/S 5V
SYS 5V
REG GND
UNREG GND
CAM ON
ZOOM T
ZOOM W
REC REVIEW
TO SK-4 BOARD CN604
CN003(WHT)
START/STOP
DEW
POWER SW
SERIAL CONT
SCK BUS
SO BUS
POWER OFF
SYSTEM RESET
BATT PRE END
BATT END
TO SK-4 BOARD CN603
CN002(WHT)
POWER ON
START
VTR ON(CPU)
VTR F/F
CAM F/F
SI BUS
RECOG COM
RECOG A
RECOG B
REEL S
TO SK-4 BOARD CN602
CN012(WHT)
UNREG
S/S 5V
V SENS
S/S GND
UNREG GND
VTR ON
CAM POWER SW
TO DS-8 BOARD CN012
CN011(WHT)
EXT POWER ON
VTR POWER SW
SERIAL CONT
SCK BUS
SO BUS
POWER OFF
SYSTEM RESET
BATT PRE END
BATT END
EXT POWER ON
TO DS-8 BOARD CN011
CN010(WHT)
START
VTR ON
VTR F/F
CAM F/F
SI BUS
TO DS-8 BOARD CN010
CN103(BLK)
REC PROOF
S902
MP/ME
RECOG COM
RECOG A
RECOG B
CN101(WHT)
REEL S
REG GND
REEL TB
REEL TA
COUNTER LED CONT
S/S 5V
TO RS-5 BOARD CN913
CN102(WHT)
DEW SENSOR
DEW(+)
DEW(-)
CN001(WHT)
REEL TB
REEL TA
COUNTER LED CONT
DEW2
DEW1
VA S/P CS
D SERVO CS
SYSTEM SYNC
MECHACON CS
TO SK-4 BOARD CN601
TO MC-8 BOARD CN503
CN105(WHT)
UNREG
UNREG GND
TO ZM-2 BOARD CN715
CN107(ORG)
CAM UNREG
ZOOM T
ZOOM W
UNREG GND
S/S
CAM ON
R/B
REG GND
CAM POWER
CN005(WHT)
BATT 6V
S/S 5V
SYS 5V
MAIN 5V
DC OUT
DEW
TAPE TOP
V SENS
BATT GND
CN006(WHT)
UNREG
VTR ON CONT
UNREG GND
REG GND
S/S 5V
VIDEO 5V
AUDIO 5V
EVF 5V
CN108(ORG)
RETURN GND
RETURN VIDEO
CAM GND
CAM IN
REG GND
TALLY
EVF 5V
CAM REC
TO ME-28 BOARD CN705
CN007(WHT)
AUDIO 5V
LINE OUT
LINE IN GND
LINE IN
CAM/LINE
AUDIO 5V GND
TO AR-
VI-7 BOARD (COMPONENT SIDE)
CN104
CN005
CN006
CN107
CN108
CN105
TP102
TP108
TP109
TP121
TP125
TP104
TP127
CP101
S101
DL101
IC101
IC102
IC104
IC105
IC106
Q101
Q102
Q103
Q120
Q123
D105
D107
L120
L110
L121
L122
L124
L126
L129
L134
L137
L138
L143
LV102
LV103
FL101
FL102
FL103
FL104
FL105
FL106
FL107
FL109
X101
X102
X103
CN001
CN002
CN003
CN004
CN007
CN008
CN009
CN010
CN011
CN012
CN013
CN014
CN101
CN102
CN103
CN109
CN110
CV101
1-613-561-
no mark : REC mode
( ) : PB mode
TO MC-8 BOARD CN506
S/S GND
TAPE TOP
S/S 4.4S
SCK BUS
SI BUS
D SERVO CS
SO BUS
VA PB MODE
JOG VD
REF V
SYSTEM SYNC
BOTH REC CONT
PB ERROR
SYSTEM RESET
SP/LP
MECHACON CS
SEL 1
SEL 2
TS A
TS B
R/P PB MODE
FE ON
R/P SW P
S/S 5V
ATF LOCK
S/S GND
CN110
REG 5V
FE ON
REG GND
CN109(WHT)
CN008(WHT)
REG GND
MUTE
RF SW P
REC AFT RF
VA PB MODE
REG 5V
TO AR-2 BOARD CN008
CN009(WHT)
PB C RF
REC C RF
MP/ME
PB Y RF
R/P PB MODE
REC Y RF
BOTH REC CONT
REG GND
TO AR-
Q, IC
D

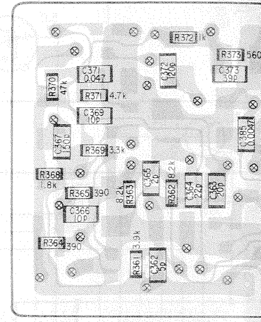

11
12
13
14
15
16
17
TO ZM-2 BOARD CN715
BLK
UNREG GND
CAM UNREG
ZOOM T
ZOOM W
UNREG GND
S/S
CAM ON
R/R
CAM POWER
REG GND
RED
GRY
CN107(ORG)
BATT 6V
S/S 5V
SYS 5V
MAIN 5V
UNREG 6V
DC OUT
DEW
TAPE TOP
V SENS
BATT GND
CN005(WHT)
UNREG
VTR ON CONT
UNREG GND
REG GND
S/S 5V
VIDEO 5V
AUDIO 5V
EVF 5V
CN006(WHT)
TO ME-2BOARD CN705
(BLK)
(YEL)
RETURN GND
RETURN VIDEO
CAM GND
CAM IN
REG GND
TALLY
EVF 5V
CAM REC
WHT
CN108 (ORG)
CN007 (WHT)
AUDIO 5V
LINE OUT
LINE IN GND
LINE IN
CAM/LINE
AUDIO 5V GND
TO AR-2BOARD CN007
CN005
CN006
CN104
CN107
CN108
CN009
IC101
IC102
IC104
TP102
TP104
TP109
TP127
CN110
CN109
1-613-561-
SI BUS
D SERVO CS
SO BUS
VA PB MODE
JOG VD
REF V
SYSTEM SYNC
BOTH REC CONT
ATF ERROR
SYSTEM RESET
SP/LP
MECHACON CS
SEL 1
SEL 2
TS A
TS B
R/P PB MODE
FE ON
RF SW P
S/S 5V
ATF LOCK
S/S GND
no mark : REC mode
( ) : PB mode
REG 5V
FE ON
REG GND
RED
GRY
CN109 (WHT)
CN008(WHT)
REG GND
MUTE
RF SW P
REC AFT RF
VA PB MODE
REG 5V
TO AR-2 BOARD CN008
CN009 (WHT)
PB C RF
REC C RF
MP/ME
PB Y RF
R/P PB MODE
REC Y RF
BOTH REC CONT
REG GND
TO AR-2 BOARD CN009

Q, IC	D	ADJ	TP
			102
			109
		RV104	
		RV103, RV105	108
114	104	RV106	121
		RV102	
	105		
104			
108		RV101	
103, 102			
123			
113 109, 122		RV108	
101			
IC102			
IC101		RV107	104
			125
118	110		
	109		
	106		
	107	RV112	
	103	LV103	
119		RV113	
120			
IC106			127
121, 124			
125			
IC108			
126			
		LV102	
IC105			
		RV110	
		RV109	
130			
IC104			
115			
117 127			
116 IC103			
IC107			
		RV111	
128			
		CV101	
Q, IC	D	ADJ	TP

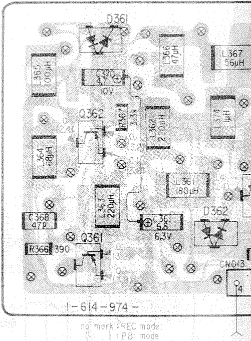
VI-7 BOARD (SOLDER SIDE)


18
19
20
21
22
23
24
25
26
27
TP102
TP108
TP109
TP121
TP125
TP104
TP127
DL102
Q101
Q104
Q108
Q109
Q113
Q114
Q115
Q116
Q117
Q118
Q119
Q121
Q122
Q124
Q125
Q126
Q127
Q128
Q130
D104
D106
D109
D110
IC103
IC107
IC108
1-613-561-
no mark : REC mode
( ) : PB mode

EX-1 BOARD(SOLDER SID



EX-1 BOARD(COMPONEN


1-614-974-
no mark : REC mode
( ) : PB mode

Note:
- ⊗ : Through hole.
- ▨ : soldering side
- ▨ : B+ pattern
- ▨ : component side

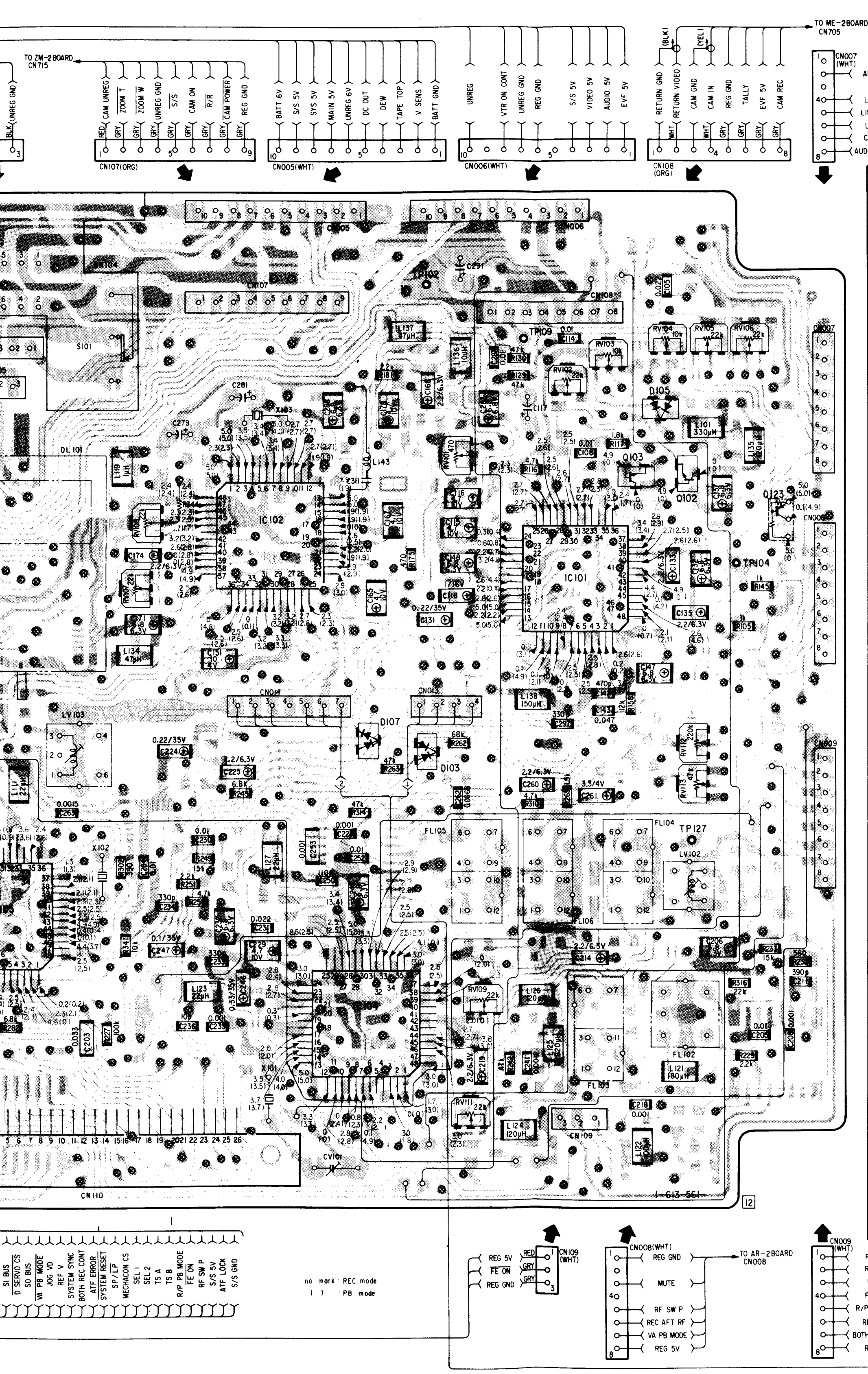
Caution:

Pattern face side: (Solder Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the pattern face are indicated.

When indicating parts by reference number, please include the board name.

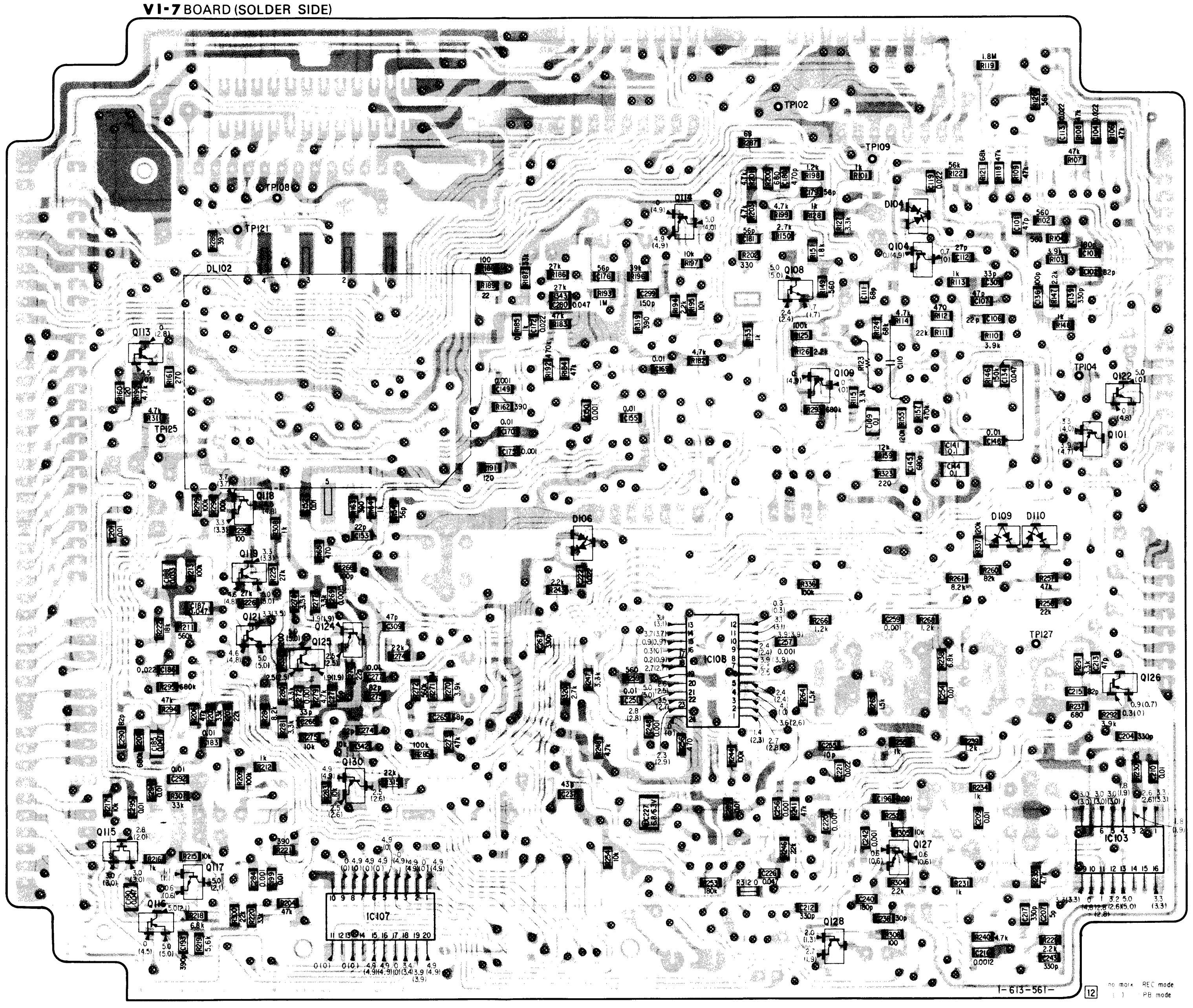
TED WIRING BOARD

11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27

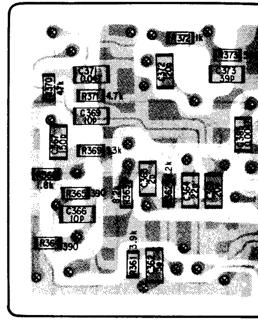

TO ZM-2BOARD CN715
CN107(ORG)
CN005(WHT)
CN006(WHT)
CN108 (ORG)
TO ME-2BOARD CN705
CN007 (WHT)
AUDIO 5V
LINE OUT
LINE IN GND
LINE IN
CAM/LINE
AUDIO 5V GND
TO AR-2BOARD CN007
IC102
IC101
DL101
CN110
CN109 (WHT)
REG 5V
FE ON
REG GND
CN008(WHT)
REG GND
MUTE
RF SW P
REC AFT RF
VA PB MODE
REG 5V
TO AR-2BOARD CN008
CN009 (WHT)
PB C RF
REC C RF
MP/ME
PB Y RF
R/P PB MODE
REC Y RF
BOTH REC CONT
REG GND
TO AR-2BOARD CN009
1-613-561-
no mark : REC mode
( ) : PB mode

Q, IC	D	ADJ	TP
			102
			109
		RV104 RV103,RV105	108
114	104	RV106	121
		RV102	
	105		
104			
108		RV101	
103,102			
113 123		RV108	
109,122			
101			
IC102 IC101		RV107	104
			125
118	110 109 106		
	107 103	RV112 LV103	
119		RV113	
120			
IC106			127
121,124			
125			
IC108 126			
		LV102	
IC105			
		RV110	
		RV109	
130 IC104			
115			
117 127			
116 IC103			
IC107		RV111	
128			
		CV101	
Q, IC	D	ADJ	TP

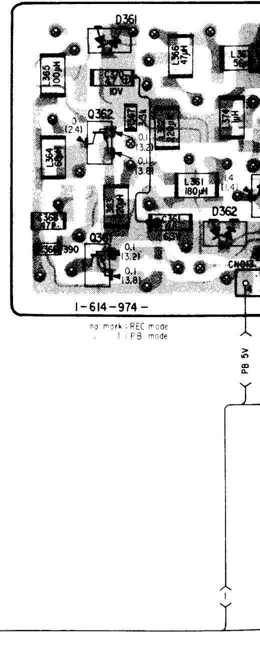
VI-7 BOARD (SOLDER SIDE)


DL102
IC107
IC108
IC103
1-613-561-
no mark : REC mode
( ) : PB mode

EX-1 BOARD (SOLDER SID



EX-1 BOARD (COMPONEN


1-614-974-
no mark : REC mode
( ) : PB mode

Note:

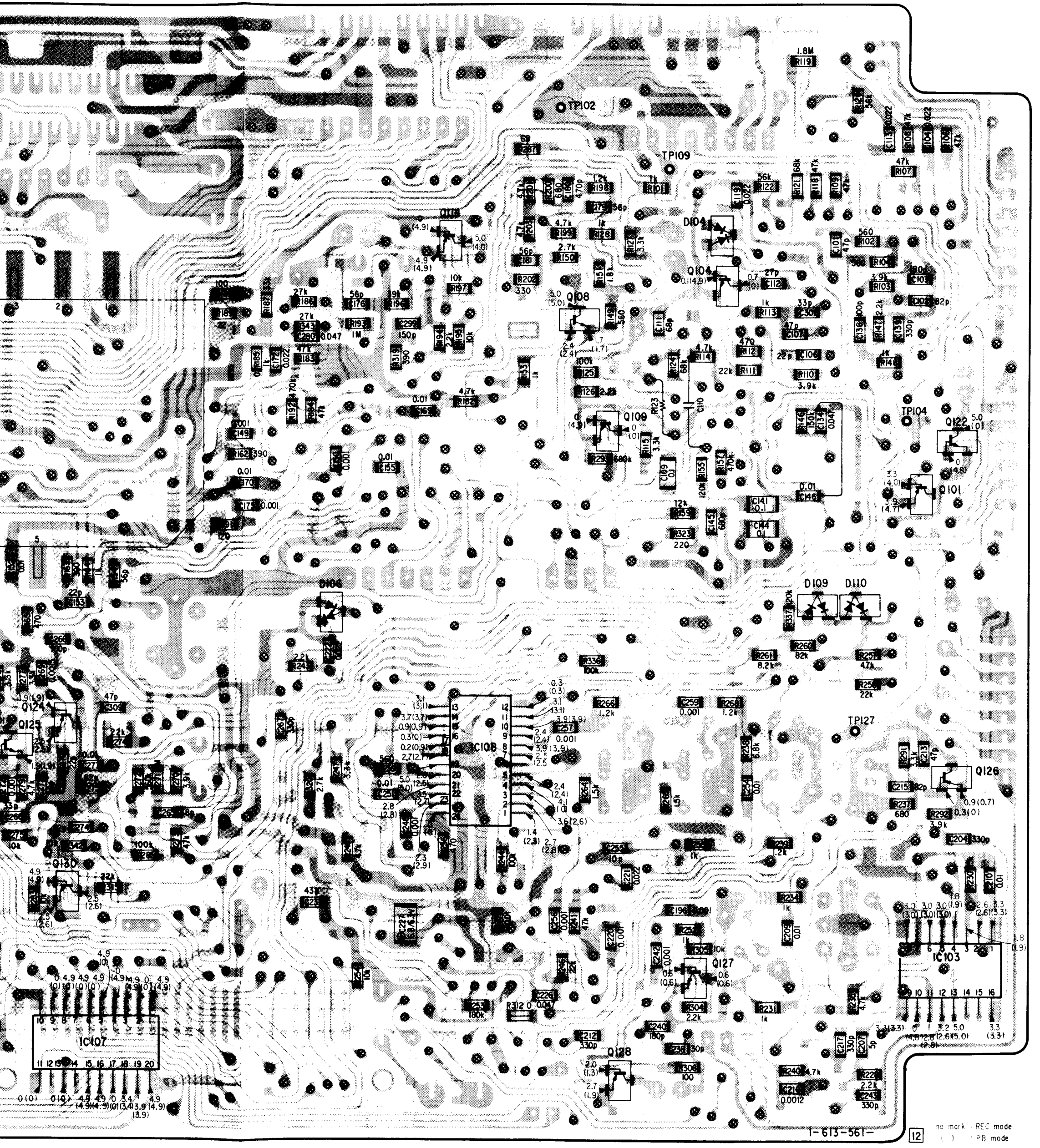
- ⊗ : Through hole.
- ▨ : soldering side
- : B+ pattern
- : component side

Caution:

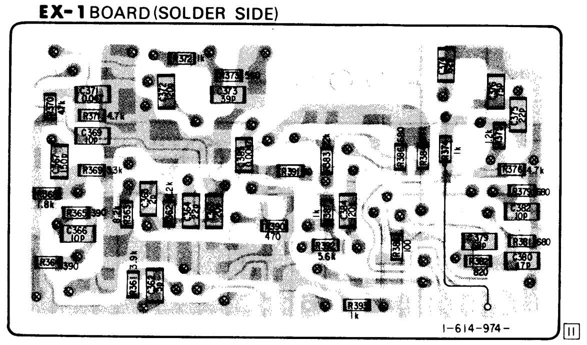
Pattern face side: (Solder Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the pattern face are indicated.

When indicating parts by reference number, please include the board name.

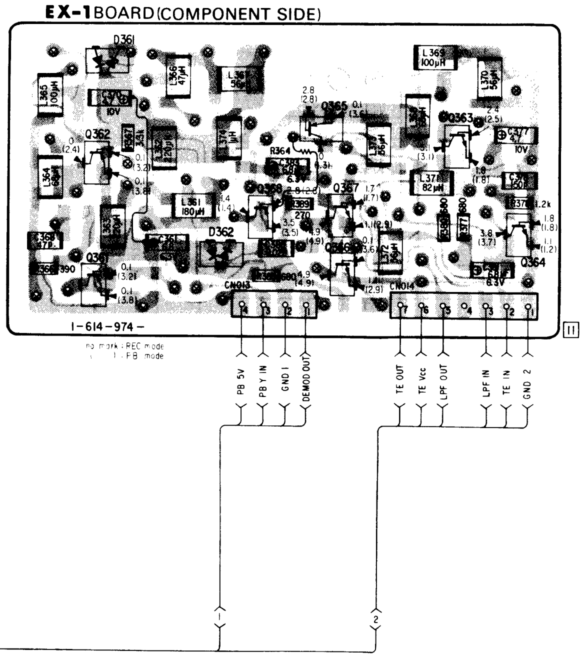
SIDE)


TP102
TP109
TP104
TP127
D104
D106
D109
D110
Q101
Q104
Q108
Q109
Q122
Q124
Q125
Q126
Q127
Q128
Q130
IC103
IC107
IC108
1-613-561-
12
no mark : REC mode
( ) : PB mode

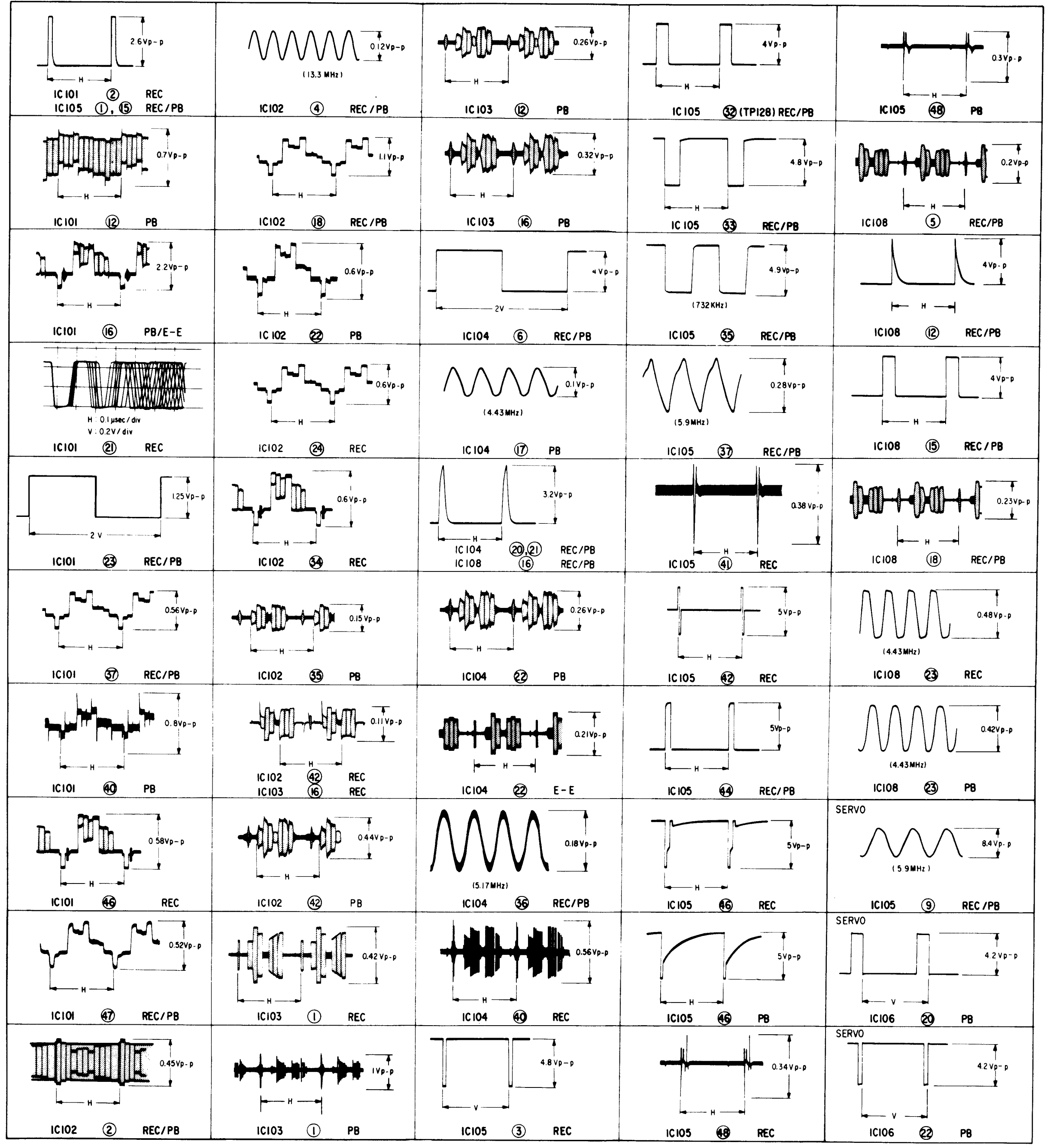
EX-1 BOARD (SOLDER SIDE)


R372 1k
R373 560
C373 39p
C371 0.047
R370 47k
R371 4.7k
C369 10p
C367 150p
R369 3.3k
R368 1.8k
R365 390
C366 10p
R364 390
R361 3.9k
R390 470
R392 5.6k
R393 1k
R376 4.7k
R375 680
C382 10p
R381 680
C380 47p
R382 820
C375 22p
1-614-974-
11

EX-1 BOARD (COMPONENT SIDE)


D361
D362
L365 100μH
L366 47μH
L369 100μH
L370 56μH
C370 47 10V
C377 4.7 10V
Q361
Q362
Q363
Q364
Q365
Q366
Q367
CN013
CN014
1-614-974-
11
no mark : REC mode
( ) : PB mode
PB 5V
PB Y IN
GND 1
DEMOD OUT
TE OUT
TE Vcc
LPF OUT
LPF IN
TE IN
GND 2

VI-7 BOARD (VIDEO/SERVO)



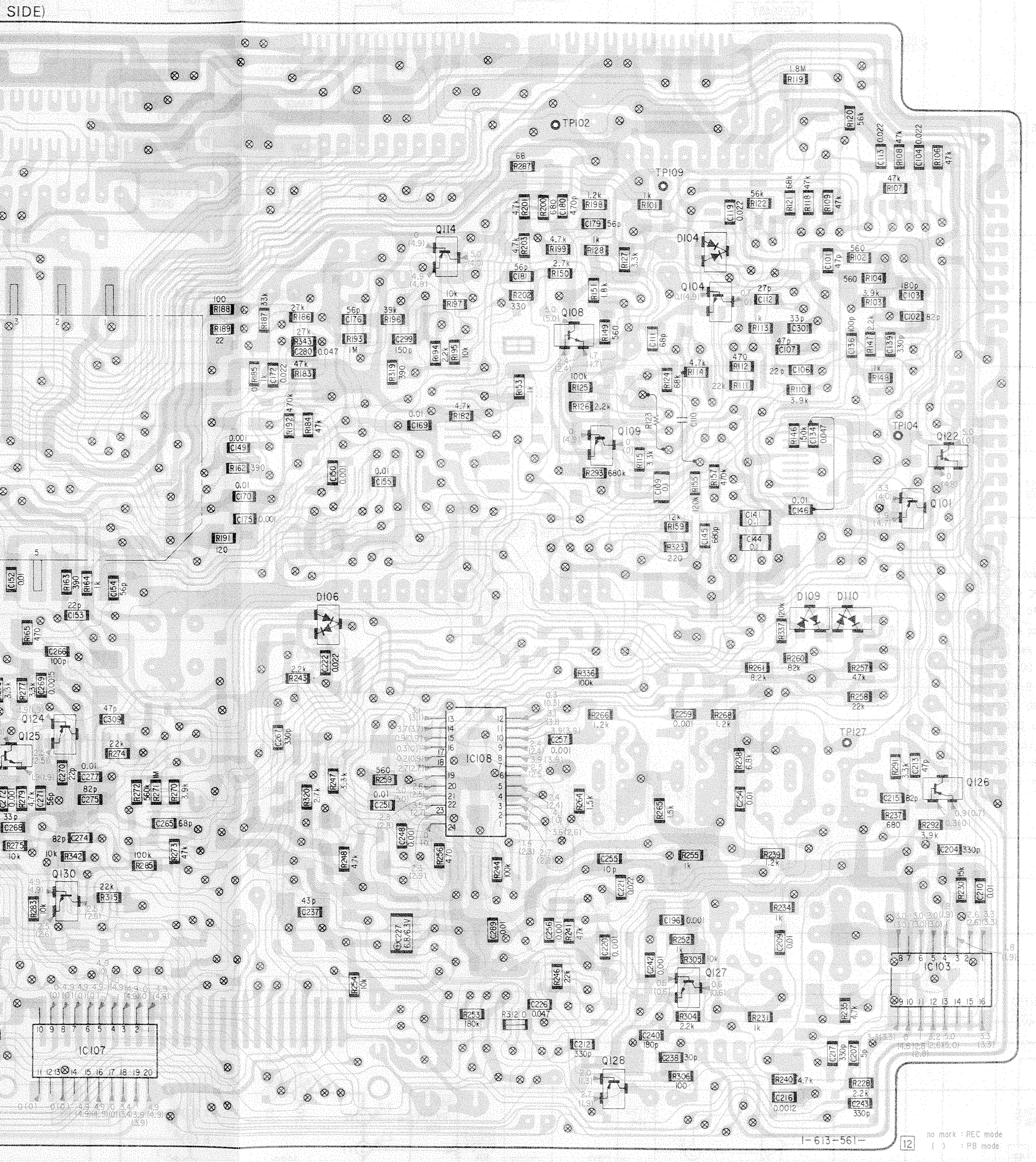
Note:

- ⊗ : Through hole.
- ▨ : soldering side
- ▨ : B+ pattern
- ▨ : component side

Caution:

Pattern face side: (Solder Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the pattern face are indicated.

When indicating parts by reference number, please include the board name.


SIDE)
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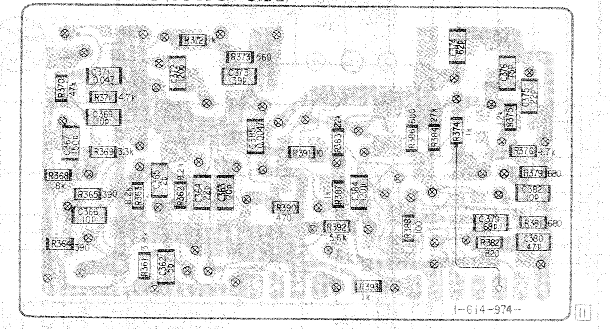
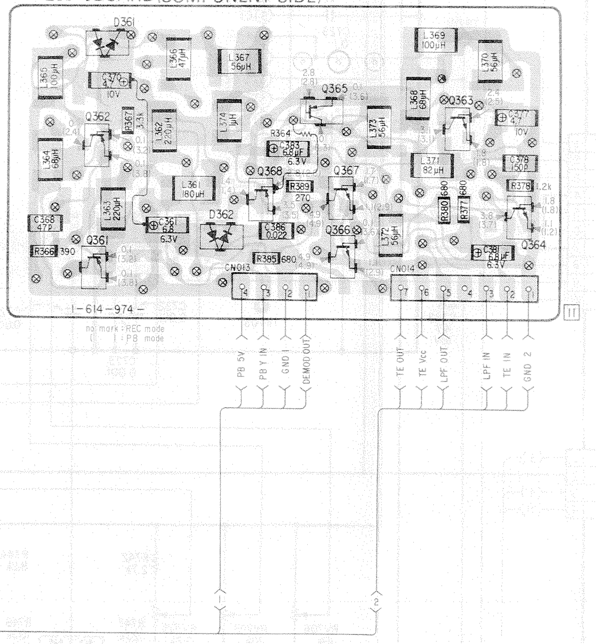
TP102
TP109
TP104
TP127
Q114
Q108
Q109
Q104
D104
Q122
Q101
D106
D109
D110
Q124
Q125
Q130
Q126
Q127
Q128
IC107
IC108
IC103
1-613-561-
no mark : REC mode
( ) : PB mode
12

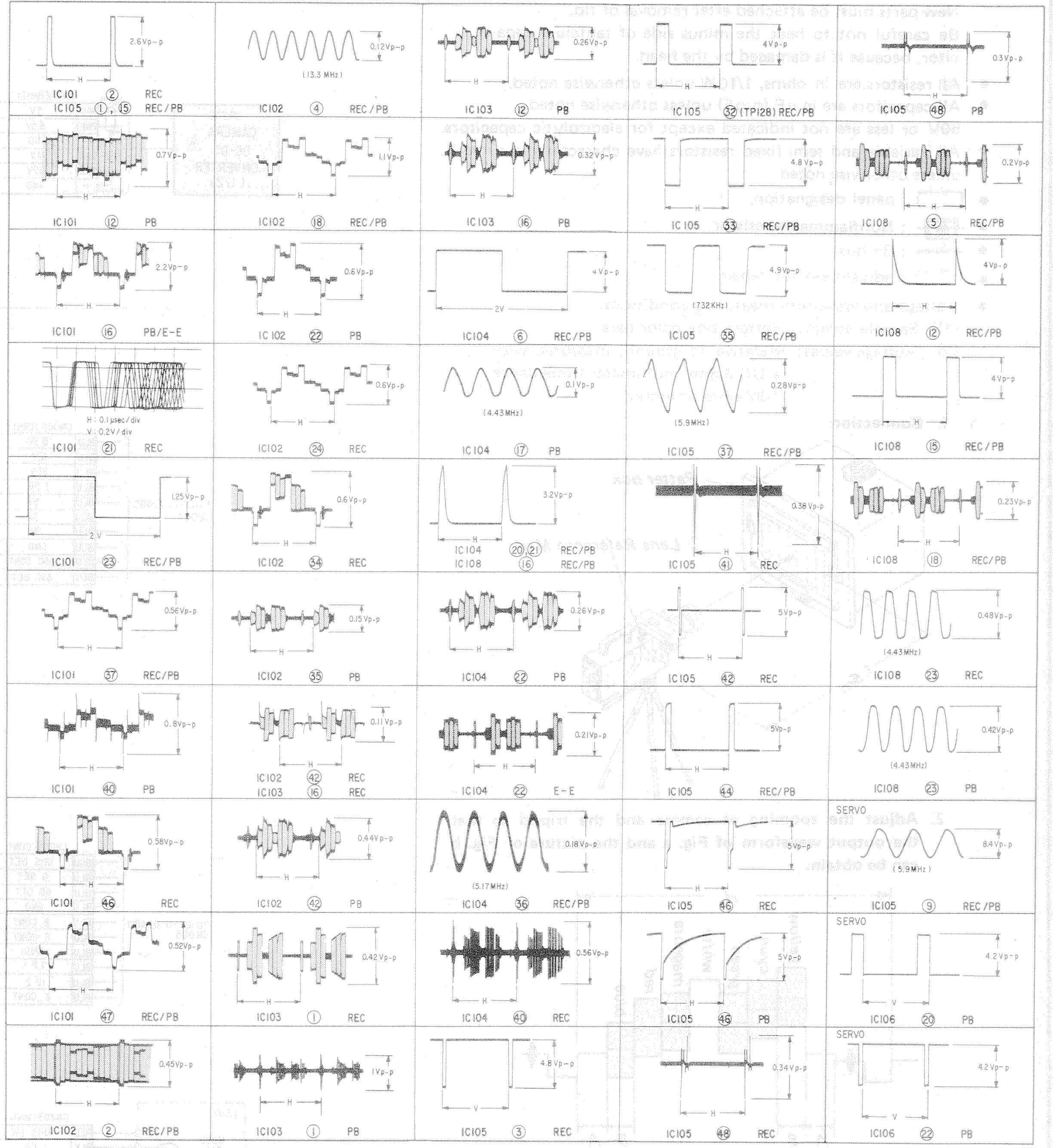
EX-1 BOARD (SOLDER SIDE)



EX-1 BOARD (COMPONENT SIDE)


D361
Q362
Q361
Q365
Q363
Q368
Q367
Q366
Q364
L367 56μH
L369 100μH
CN013
CN014
1-614-974-
no mark : REC mode
( ) : PB mode
PB 9V
PB Y IN
GND 1
DEMOD OUT
TE OUT
TE Vcc
LPF OUT
LPF IN
TE IN
GND 2
11

VI-7 BOARD (VIDEO/SERVO)



Note:
- ⊗ : Through hole.
- ▨ : soldering side
- ▨ : B+ pattern
- ▨ : component side

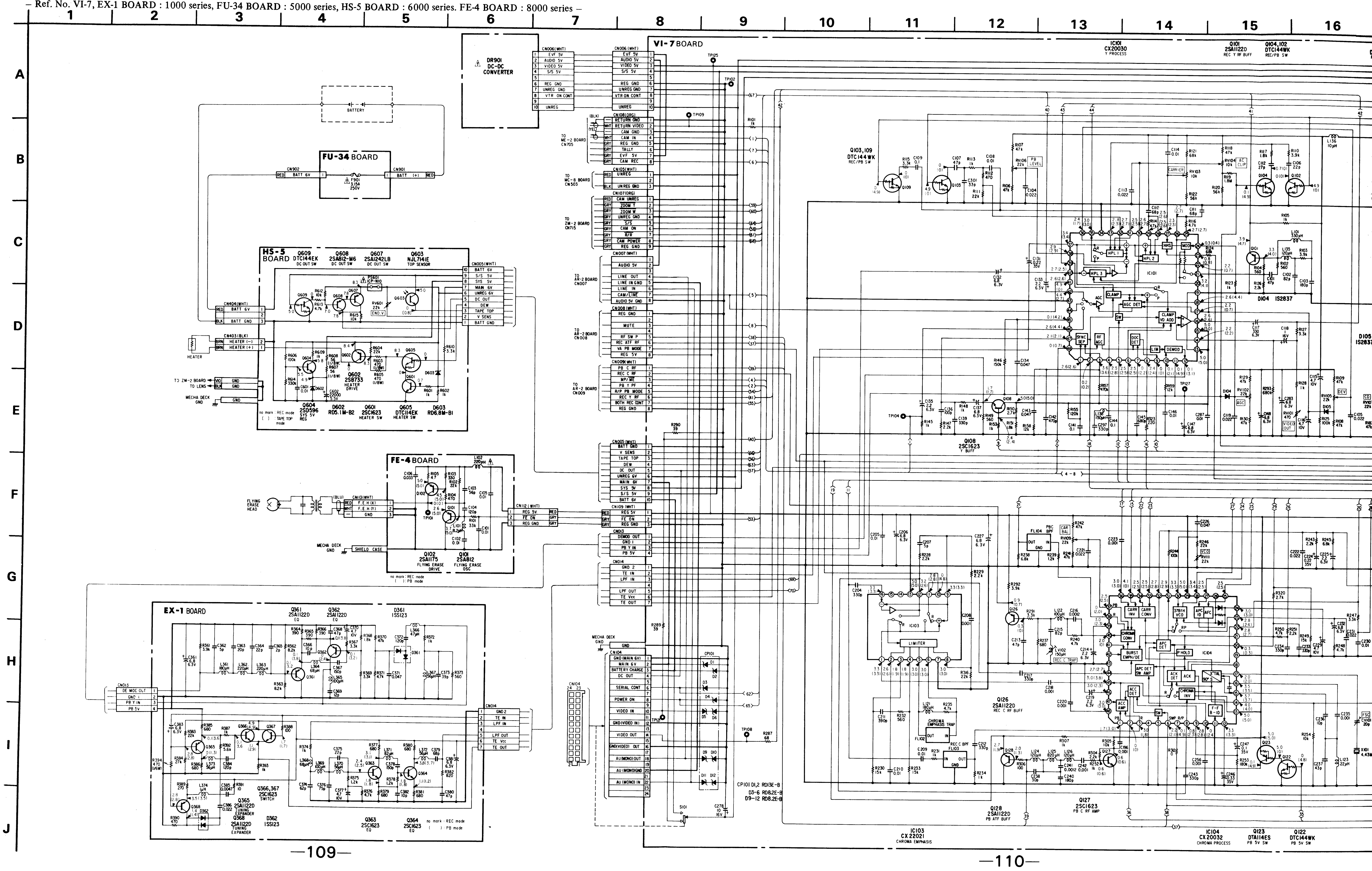
Caution:

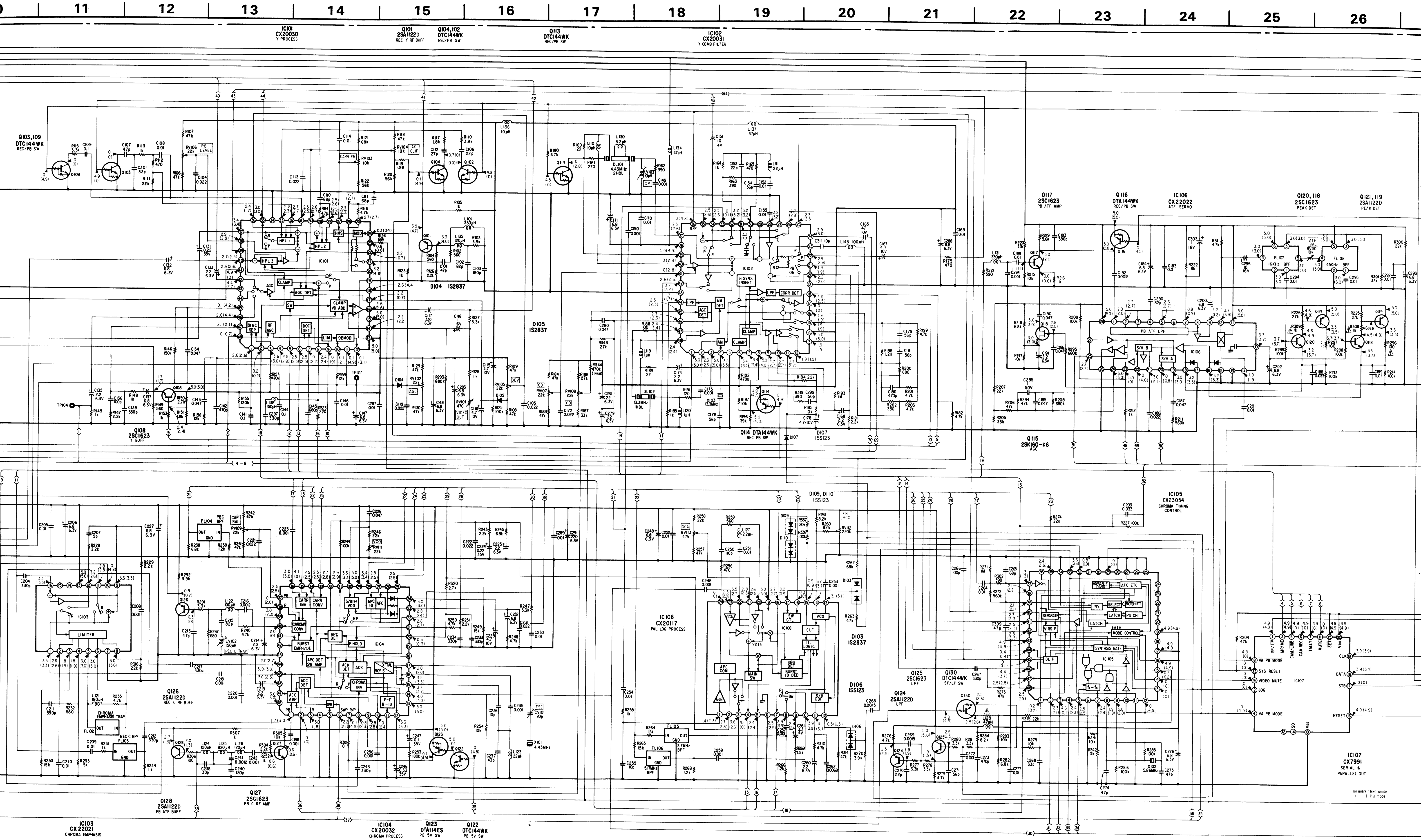
Pattern face side: (Solder Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the pattern face are indicated.

When indicating parts by reference number, please include the board name.

VI-7 (Y, CHROMA SIGNAL PROCESS), FU-34 (FUSE), HS-5 (TAPE SENSOR/SWITCH), FE-4 (FLYING ERASE), EX-1 (TUNING EXPANDER, EQ) SCHEMATIC DIAGRAM

– Ref. No. VI-7, EX-1 BOARD : 1000 series, FU-34 BOARD : 5000 series, HS-5 BOARD : 6000 series. FE-4 BOARD : 8000 series –


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H I J
DR901 DC-DC CONVERTER
BATTERY
FU-34 BOARD
CN902 BATT 6V
F901 3.15A 250V
CN901 BATT (+)
HS-5 BOARD
Q609 DTC144EK DC OUT SW
Q608 2SA812-M6 DC OUT SW
Q607 2SA1242LB DC OUT SW
Q603 NJL7141E TOP SENSOR
Q604 2SD596 SYS 5V REG
D602 RD5.1M-B2
Q602 2SB733 HEATER DRIVE
Q601 2SC1623 HEATER SW
Q605 DTC114EK HEATER SW
D603 RD6.8M-B1
HEATER
TO ZM-2 BOARD
TO LENS
MECHA DECK GND
no mark : REC mode
( ) : TAPE TOP mode
FE-4 BOARD
FLYING ERASE HEAD
Q102 2SA1175 FLYING ERASE DRIVE
Q101 2SA812 FLYING ERASE OSC
no mark : REC mode
( ) : PB mode
EX-1 BOARD
Q361 2SA1122D EQ
Q362 2SA1122D EQ
D361 1SS123
Q365 2SA1122D TUNING EXPANDER
Q368 2SA1122D TUNING EXPANDER
D362 1SS123
Q366,367 2SC1623 SWITCH
Q363 2SC1623 EQ
Q364 2SC1623 EQ
no mark : REC mode
( ) : PB mode
CN013 DE MOC OUT GND I PB Y IN PB 5V
CN014 GND 2 TE IN LPF IN LPF OUT TE Vcc TE OUT
VI-7 BOARD
CN006 (WHT) EVF 5V AUDIO 5V VIDEO 5V S/S 5V REG GND UNREG GND VTR ON CONT UNREG
TO ME-2 BOARD CN705
TO MC-8 BOARD CN503
TO ZM-2 BOARD CN715
TO AR-2 BOARD CN007
TO AR-2 BOARD CN008
TO AR-2 BOARD CN009
MECHA DECK GND
TP125 TP102 TP109 TP104 TP127 TP108 TP121
Q103,109 DTC144WK REC/PB SW
Q108 2SC1623 Y BUFF
IC101 CX20030 Y PROCESS
Q101 2SA1122D REC Y RF BUFF
Q104,102 DTC144WK REC/PB SW
D104 1S2837
D105 1S2837
IC103 CX22021 CHROMA EMPHASIS
IC104 CX20032 CHROMA PROCESS
Q126 2SA1122D REC C RF BUFF
Q128 2SA1122D PB ATF BUFF
Q127 2SC1623 PB C RF AMP
Q123 DTA114ES PB 5V SW
Q122 DTC144WK PB 5V SW
CP101 D1,2 RD13E-B
D3-6 RD8.2E-B
D9-12 RD8.2E-B
S101
AGC CLAMP AGC DET SYNC SEP RF AGC DOC DET LIM DEMOD CLAMP VD ADD HPL 1 HPL 2 HPL 3 NHS MOD SW
LIMITER
CARR INV CARR CONV 378fH VCO APC 1/2 AFC BURST EMPH/DE APC DET P HOLD ACK DET ACK XTAL 90° S CHROMA INV F-F B-ID ACC DET ACC AMP SW APC DET SW AMP
FL104 PBC BPF
FL102 CHROMA EMPHASIS TRAP
FL103 REC C BPF
LV102 REC C TRAP
CARRIER AC CLIP PB LEVEL CAR BAL VCO AGC DEV VIDEO OUT
CN104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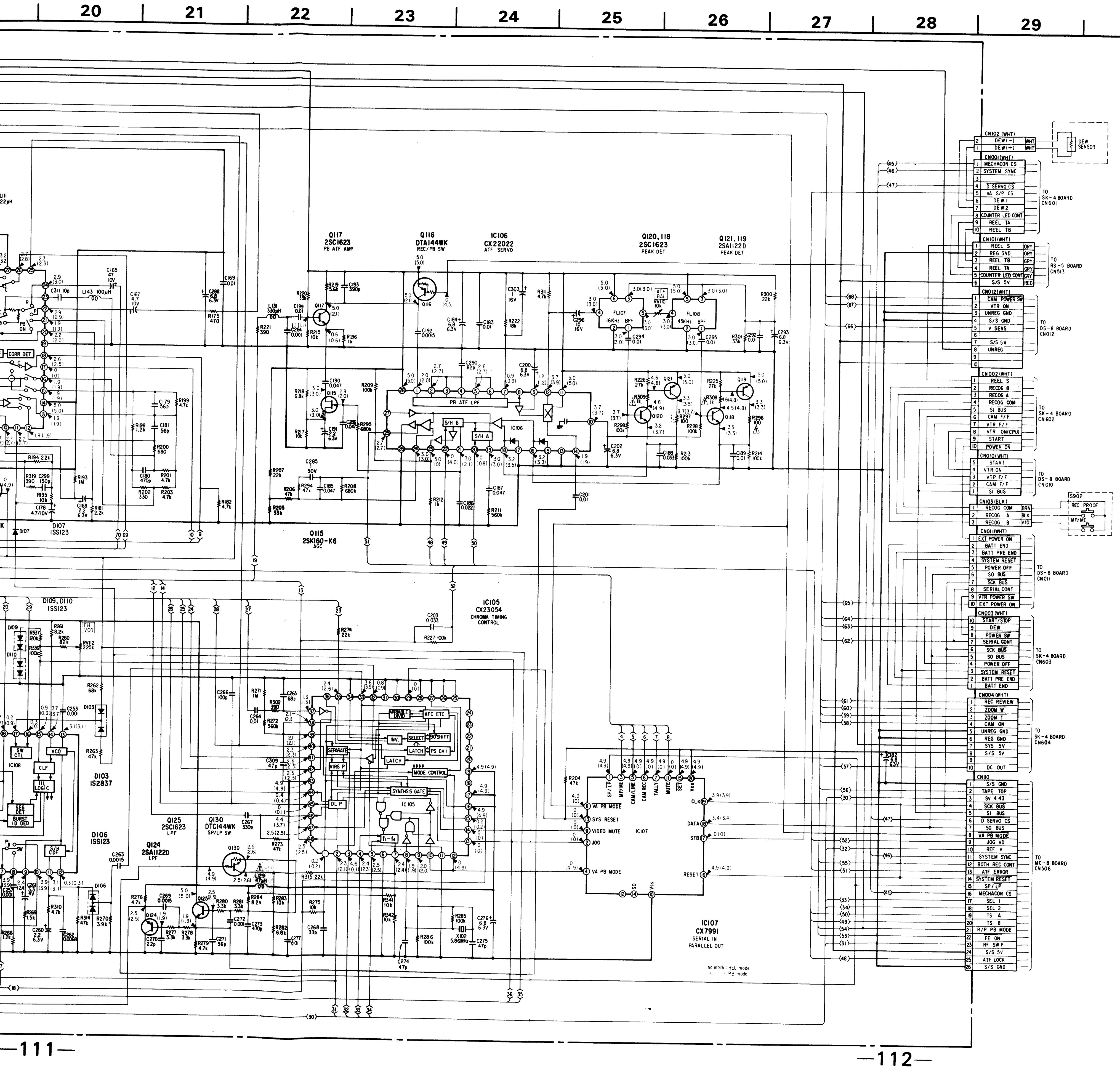
26
IC101 CX20030 Y PROCESS
Q101 2SA1122D REC Y RF BUFF
Q104,102 DTC144WK REC/PB SW
Q113 DTC144WK REC/PB SW
IC102 CX20031 Y COMB FILTER
Q103,109 DTC144WK REC/PB SW
Q108 2SC1623 Y BUFF
D104 1S2837
D105 1S2837
Q114 DTA144WK REC PB SW
D107 1SS123
Q117 2SC1623 PB ATF AMP
Q116 DTA144WK REC/PB SW
IC106 CX22022 ATF SERVO
Q120,118 2SC1623 PEAK DET
Q121,119 2SA1122D PEAK DET
Q115 2SK160-K6 AGC
IC105 CX23054 CHROMA TIMING CONTROL
D109, D110 1SS123
D103 1S2837
D106 1SS123
IC108 CX20117 PAL LOG PROCESS
Q126 2SA1122D REC C RF BUFF
Q127 2SC1623 PB C RF AMP
Q128 2SA1122D PB ATF BUFF
IC103 CX22021 CHROMA EMPHASIS
IC104 CX20032 CHROMA PROCESS
Q123 DTA114ES PB 5V SW
Q122 DTC144WK PB 5V SW
Q125 2SC1623 LPF
Q124 2SA1122D LPF
Q130 DTC144WK SP/LP SW
IC107 CX7991 SERIAL IN PARALLEL OUT
no mark : REC mode
( ) : PB mode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34
35
A
B
C
D
E
F
G
H
I
J
Q117
2SC1623
PB ATF AMP
Q116
DTA144WK
REC/PB SW
IC106
CX22022
ATF SERVO
Q120, 118
2SC1623
PEAK DET
Q121, 119
2SA1122D
PEAK DET
FL107
16KHz BPF
FL108
45KHz BPF
ATF BAL
RV110
PB ATF LPF
S/H B
S/H A
Q115
2SK160-K6
AGC
IC105
CX23054
CHROMA TIMING
CONTROL
D107
1SS123
D109, D110
1SS123
D103
1S2837
D106
1SS123
Q125
2SC1623
LPF
Q130
DTC144WK
SP/LP SW
Q124
2SA1122D
LPF
X102
5.86MHz
VCO
CLF
IIL LOGIC
SEG DET
BURST ID DET
SW CTL
S/H CDF
CORR DET
VARIABLE DIVIDER
AFC ETC
INV.
SELECT
SHIFT
LATCH
PS CH1
SEPARATE
LATCH
MODE CONTROL
SYNTHESIS GATE
VIRS P
DL P
IC105
f1 – f4
IC107
CX7991
SERIAL IN
PARALLEL OUT
SP/LP
MP/ME
CAM/LINE
CAM REC
TALLY
MUTE
STB
VDD
VA PB MODE
SYS RESET
VIDEO MUTE
JOG
VA PB MODE
CLK
DATA
STB
RESET
VSS
no mark : REC mode
( ) : PB mode
CN102 (WHT)
DEW (−)
DEW (+)
DEW SENSOR
CN001 (WHT)
MECHACON CS
SYSTEM SYNC
D SERVO CS
VA S/P CS
DEW 1
DEW 2
COUNTER LED CONT
REEL TA
REEL TB
TO SK-4 BOARD CN601
CN101 (WHT)
REEL S
REG GND
REEL TB
REEL TA
COUNTER LED CONT
S/S 5V
TO RS-5 BOARD CN513
CN012 (WHT)
CAM POWER SW
VTR ON
UNREG GND
S/S GND
V. SENS
S/S 5V
UNREG
TO DS-8 BOARD CN012
CN002 (WHT)
REEL S
RECOG B
RECOG A
RECOG COM
SI BUS
CAM F/F
VTR F/F
VTR ON (CPU)
START
POWER ON
TO SK-4 BOARD CN602
CN010 (WHT)
START
VTR ON
VTR F/F
CAM F/F
SI BUS
TO DS-8 BOARD CN010
CN103 (BLK)
RECOG COM
RECOG A
RECOG B
S902
REC PROOF
MP/ME
CN011 (WHT)
EXT POWER ON
BATT END
BATT PRE END
SYSTEM RESET
POWER OFF
SO BUS
SCK BUS
SERIAL CONT
VTR POWER SW
EXT POWER ON
TO DS-8 BOARD CN011
CN003 (WHT)
START/STOP
DEW
POWER SW
SERIAL CONT
SCK BUS
SO BUS
POWER OFF
SYSTEM RESET
BATT PRE END
BATT END
TO SK-4 BOARD CN603
CN004 (WHT)
REC REVIEW
ZOOM W
ZOOM T
CAM ON
UNREG GND
REG GND
SYS 5V
S/S 5V
DC OUT
TO SK-4 BOARD CN604
CN110
S/S GND
TAPE TOP
SV 4.43
SCK BUS
SI BUS
D SERVO CS
SO BUS
VA PB MODE
JOG VD
REF V
SYSTEM SYNC
BOTH REC CONT
ATF ERROR
SYSTEM RESET
SP/LP
MECHACON CS
SEL 1
SEL 2
TS A
TS B
R/P PB MODE
FE ON
RF SWP
S/S 5V
ATF LOCK
S/S GND
TO MC-8 BOARD CN506

Note:

- All resistors are in ohms, 1/10W unless otherwise noted.
- All capacitors are in μF (p:pF) unless otherwise noted. 50V or less are not indicated except for electrolytic capacitors.
- All variable and semi fixed resistors have characteristic curve B, unless otherwise noted.
- ▭ : panel designation.
- ▭ : Nonflammable resistor
- —— : B+ bus.
- ▭ : adjustment for repair.
- Voltage and waveform measuring conditions:
  - (1) Sample object: Pattern box color bars.
  - (2) Voltage values: Relative to ground, measured with a DC digital multimeter (impedance 10M-ohm or more).

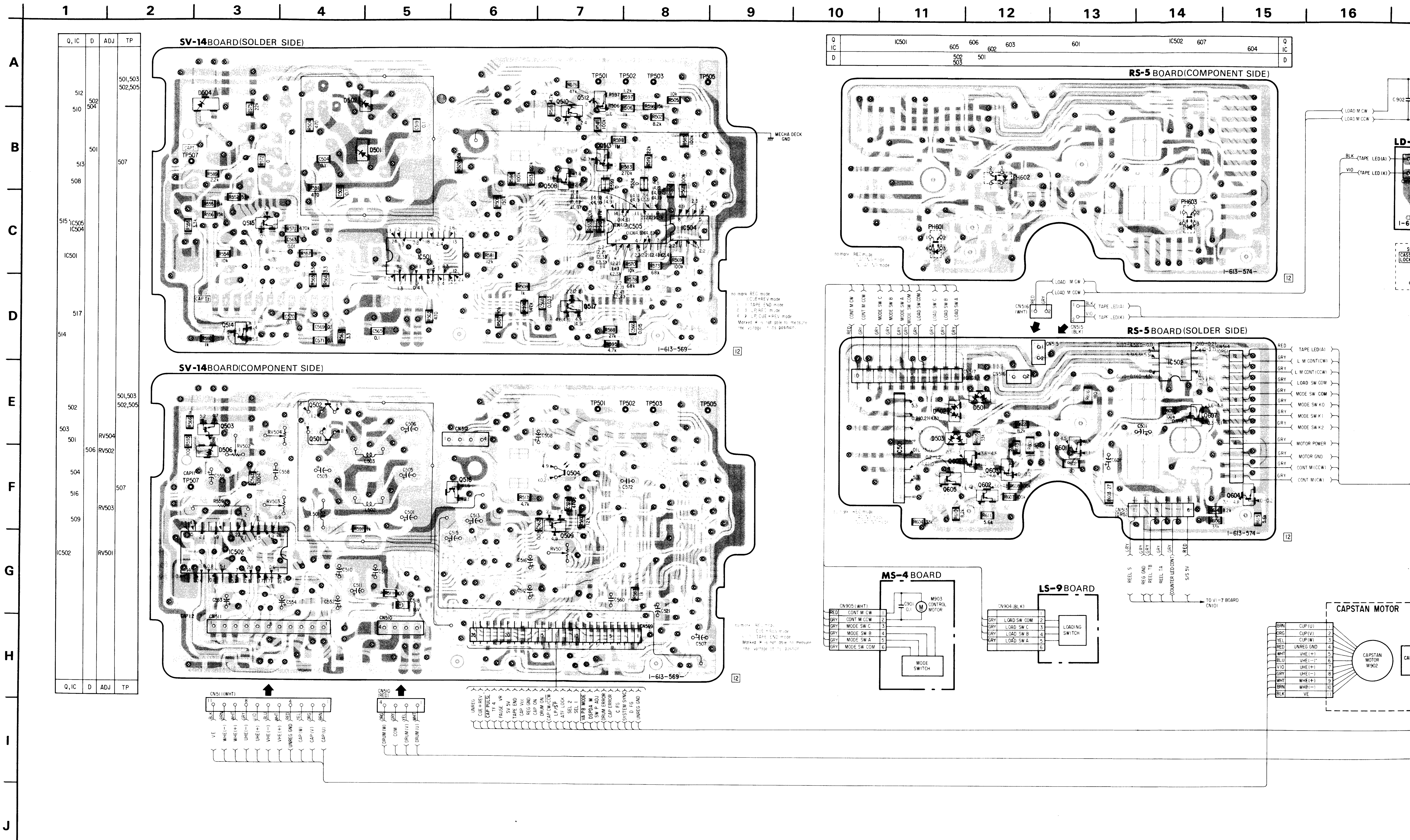
Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

SERVO/MECHANISM CONTROL

4-5. MC-8 (SERVO/MECHANISM CONTROL), SV-14 (DRUM MOTOR/CAPSTAN MOTOR DRIVE), MS-4 (MODE SWITCH/MODE CONTROL MOTOR), LS-9 (LOADING SWITCH), LD-1 (TAPE SENSOR LED), RS-5 (LOADING MOTOR/CONTROL MOTOR DRIVE

– Ref. No. MC-8 BOARD : 1000 series, SV-14, MS-4, LS-9, LD-1 BOARD : 5000 series, RS-5 BOARD : 8000 series –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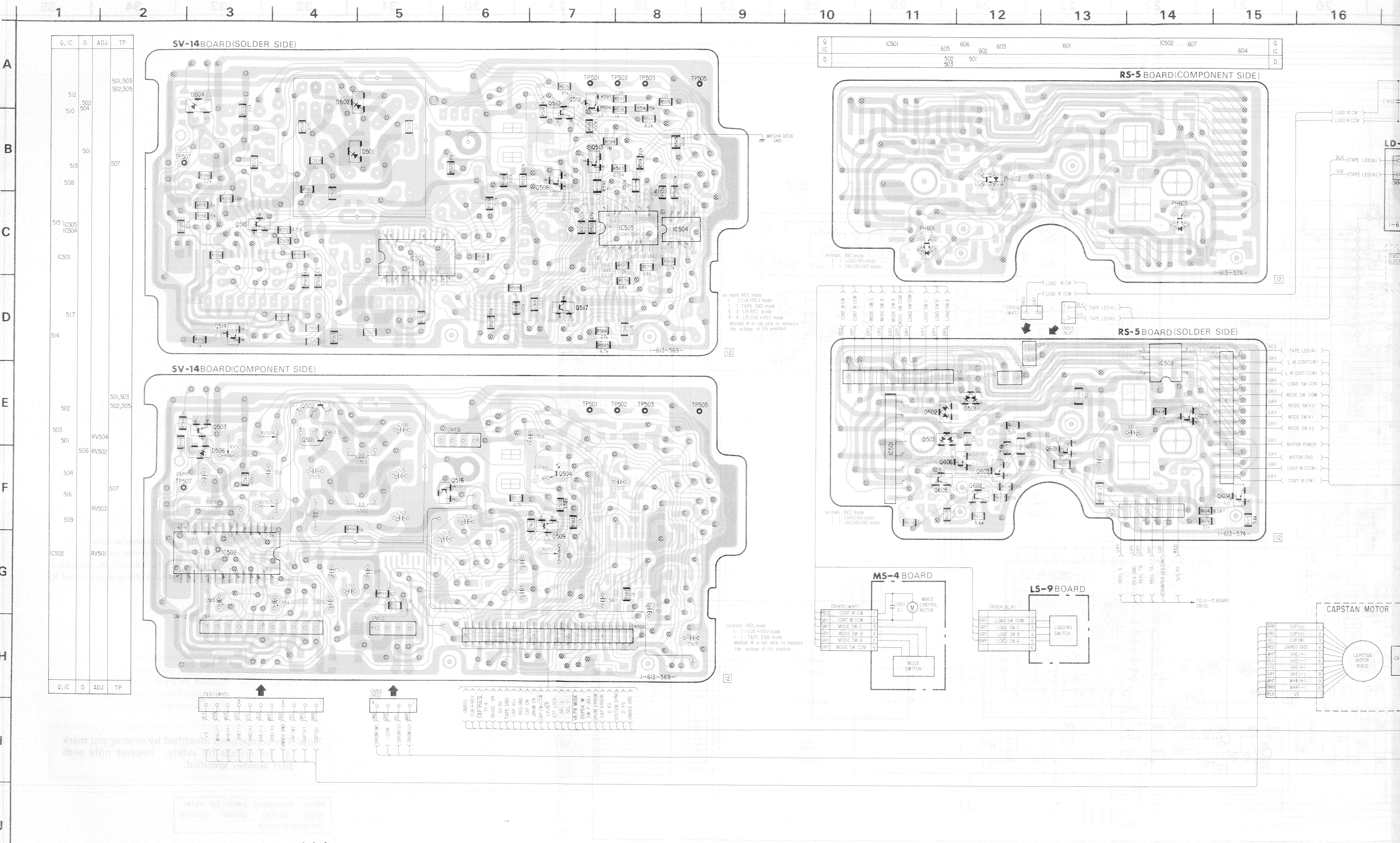
16
A
B
C
D
E
F
G
H
I
J
Q, IC
D
ADJ
TP
SV-14 BOARD (SOLDER SIDE)
SV-14 BOARD (COMPONENT SIDE)
RS-5 BOARD (COMPONENT SIDE)
RS-5 BOARD (SOLDER SIDE)
MS-4 BOARD
LS-9 BOARD
CAPSTAN MOTOR
MECHA DECK GND
TP501
TP502
TP503
TP505
TP507
IC501
IC502
IC504
IC505
PH601
PH602
PH603
CN510 (RED)
CN511 (WHT)
CN515 (BLK)
CN516 (WHT)
CN905 (WHT)
CN904 (BLK)
1-613-569-
1-613-574-
M903 CONTROL MOTOR
MODE SWITCH
LOADING SWITCH
CAPSTAN MOTOR M902
LOAD M CW
LOAD M CCW
TAPE LED (A)
TAPE LED (K)
CONT M CW
CONT M CCW
MODE SW A
MODE SW B
MODE SW C
MODE SW COM
LOAD SW A
LOAD SW B
LOAD SW C
LOAD SW COM
MOTOR POWER
MOTOR GND
CUP (U)
CUP (V)
CUP (W)
UNREG GND
VHE (+)
VHE (−)
UHE (+)
UHE (−)
WHE (+)
WHE (−)
VE
DRUM (W)
COM
DRUM (V)
DRUM (U)
TO VI-7 BOARD CN101
REEL S
REG GND
REEL TB
REEL TA
COUNTER LED CONT
S/S 5V

SERVO/MECHANISM CONTROL

4-5. MC-8 (SERVO/MECHANISM CONTROL), SV-14 (DRUM MOTOR/CAPSTAN MOTOR DRIVE), MS-4 (MODE SWITCH/MODE CONTROL MOTOR), LS-9 (LOADING SWITCH), LD-1 (TAPE SENSOR LED), RS-5 (LOADING MOTOR/CONTROL MOTOR DRIVE

– Ref. No. MC-8 BOARD : 1000 series, SV-14, MS-4, LS-9, LD-1 BOARD : 5000 series, RS-5 BOARD : 8000 series –



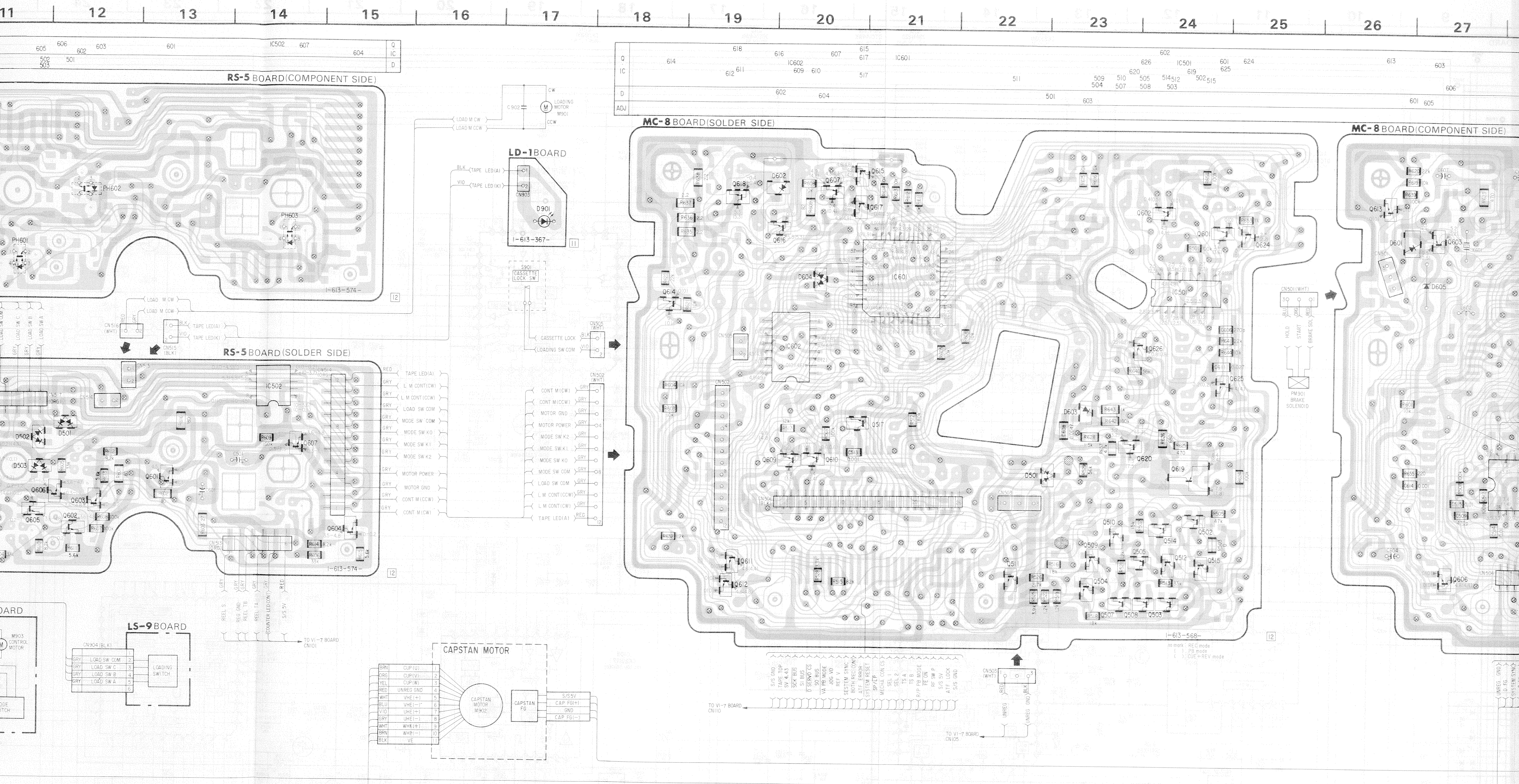
SV-14 BOARD (SOLDER SIDE)
SV-14 BOARD (COMPONENT SIDE)
RS-5 BOARD (COMPONENT SIDE)
RS-5 BOARD (SOLDER SIDE)
MS-4 BOARD
LS-9 BOARD
CAPSTAN MOTOR
Q, IC
D
ADJ
TP
TP501
TP502
TP503
TP505
TP507
IC501
IC502
IC504
IC505
PH601
PH602
PH603
MECHA DECK GND
1-613-569-
1-613-574-
12
CN905 (WHT)
RED
CONT M CW
GRY
CONT M CCW
MODE SW C
MODE SW B
MODE SW A
MODE SW COM
C901 0.1
M903 CONTROL MOTOR
MODE SWITCH
CN904 (BLK)
LOAD SW COM
LOAD SW C
LOAD SW B
LOAD SW A
LOADING SWITCH
CN516 (WHT)
CN515 (BLK)
LOAD M CW
LOAD M CCW
BLK
VIO
TAPE LED(A)
TAPE LED(K)
L M CONT(CW)
L M CONT(CCW)
MODE SW K0
MODE SW K1
MODE SW K2
MOTOR POWER
MOTOR GND
CONT M(CCW)
CONT M(CW)
BRN
ORG
YEL
WHT
BLU
CUP(U)
CUP(V)
CUP(W)
UNREG GND
VHE(+)
VHE(−)
UHE(+)
UHE(−)
WHE(+)
WHE(−)
VE
CAPSTAN MOTOR M902
CN511 (WHT)
CN510 (RED)
CN509
DRUM (W)
COM
DRUM (V)
DRUM (U)
REEL S
REG GND
REEL TB
REEL TA
COUNTER LED(CONT)
S/G 5V
TO VI-7 BOARD CN101

no mark : REC mode
( ) : CUE+REV mode
〈 〉 : TAPE END mode
《 》 : LP, REC mode
《 》 : LP, CUE+REV mode
Marked ※ is not able to measure the voltage of it's position.

no mark : REC mode
( ) : CUE+REV mode
〈 〉 : TAPE END mode
Marked ※ is not able to measure the voltage of it's position.

no mark : REC mode
( ) : LOADING mode
〈 〉 : UNLOADING mode

SWITCH), LD-1 (TAPE SENSOR LED), RS-5 (LOADING MOTOR/CONTROL MOTOR DRIVE) PRINTED WIRING BOARDS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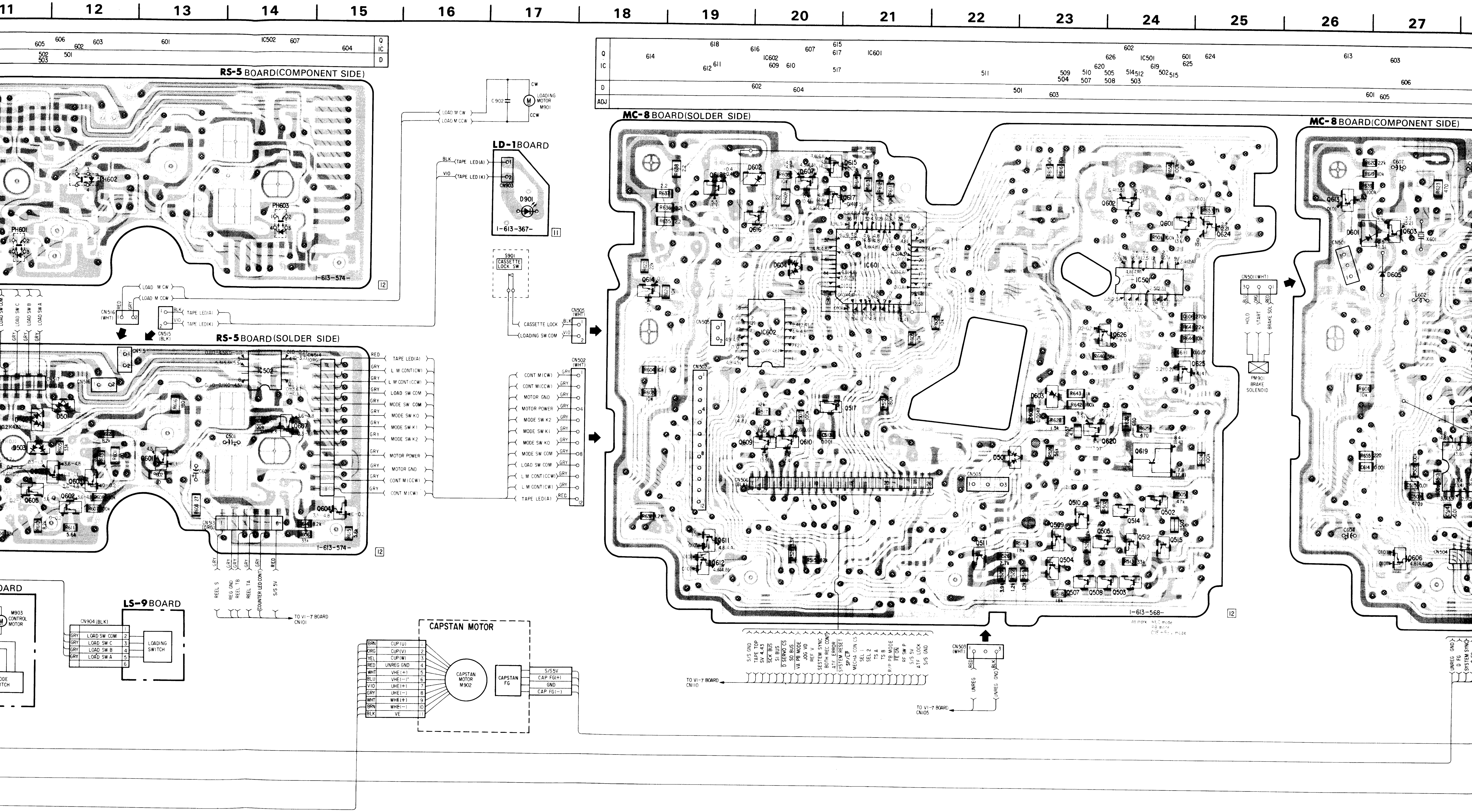
RS-5 BOARD (COMPONENT SIDE)
RS-5 BOARD (SOLDER SIDE)
LD-1 BOARD
LS-9 BOARD
MC-8 BOARD (SOLDER SIDE)
MC-8 BOARD (COMPONENT SIDE)
CAPSTAN MOTOR
IC502
IC601
IC602
IC501
D901
S901 CASSETTE LOCK SW
LOADING MOTOR M901
PM901 BRAKE SOLENOID
CAPSTAN MOTOR M902
CAPSTAN FG
LOADING SWITCH
M903 CONTROL MOTOR
1-613-574-
1-613-367-
1-613-568-
TO VI-7 BOARD CN101
TO VI-7 BOARD CN110
TO VI-7 BOARD CN105

SWITCH), LD-1 (TAPE SENSOR LED), RS-5 (LOADING MOTOR/CONTROL MOTOR DRIVE) PRINTED WIRING BOARDS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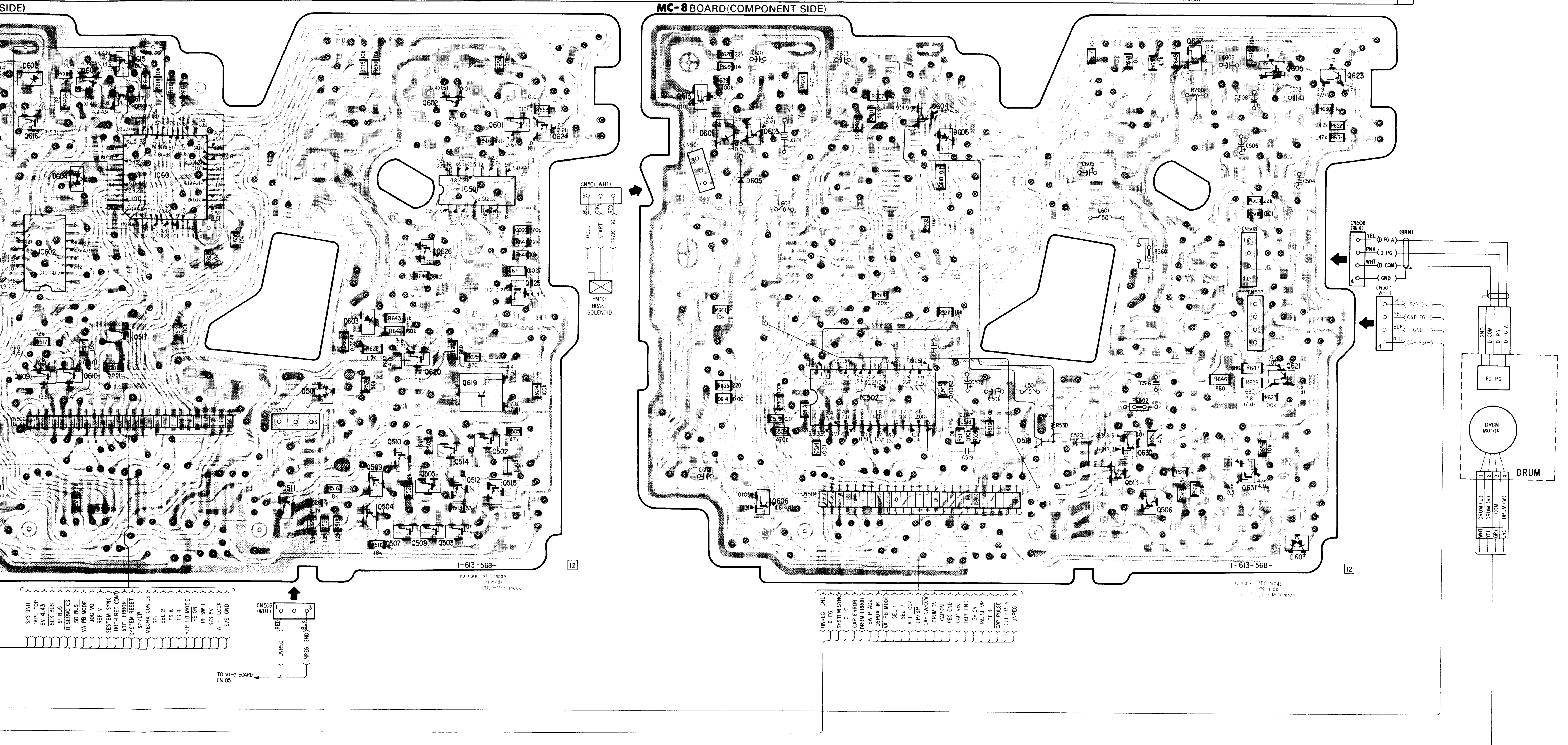
26
27
RS-5 BOARD(COMPONENT SIDE)
RS-5 BOARD(SOLDER SIDE)
LD-1 BOARD
LS-9 BOARD
CAPSTAN MOTOR
MC-8 BOARD(SOLDER SIDE)
MC-8 BOARD(COMPONENT SIDE)
PH601
PH602
PH603
IC502
IC601
IC602
IC501
1-613-574-
1-613-367-
1-613-568-
LOADING MOTOR M901
C902
TAPE LED(A)
TAPE LED(K)
D901
S901 CASSETTE LOCK SW
CASSETTE LOCK
LOADING SW COM
CN505 (WHT)
CN502 (WHT)
CN503 (WHT)
CN501 (WHT)
CN515 (BLK)
CN516 (WHT)
CN904 (BLK)
LOAD SW COM
LOAD SW C
LOAD SW B
LOAD SW A
LOADING SWITCH
M903 CONTROL MOTOR
CONT M(CW)
CONT M(CCW)
MOTOR GND
MOTOR POWER
MODE SW K2
MODE SW K1
MODE SW K0
MODE SW COM
L M CONT(CCW)
L M CONT(CW)
CUP(U)
CUP(V)
CUP(W)
UNREG GND
VHE(+)
VHE(−)
UHE(+)
UHE(−)
WHE(+)
WHE(−)
VE
CAPSTAN MOTOR M902
CAPSTAN FG
S/S5V
CAP FG(+)
GND
CAP FG(−)
REEL S
REG GND
REEL TB
REEL TA
COUNTER LED(ON)
S/S 5V
TO VI-7 BOARD CN101
TO VI-7 BOARD CN110
TO VI-7 BOARD CN105
UNREG
UNREG GND
PM901 BRAKE SOLENOID
HOLD
START
BRAKE SOL
S/S GND
TAPE TOP
SV 4.43
SCK BUS
SI BUS
D SERVO CS
SO BUS
VA PB MODE
JOG VD
REF V
SYSTEM SYNC
BOTH REC CONT
ATF ERROR
SYSTEM RESET
SP/LP
MECHA CON CS
SEL 1
SEL 2
TS A
TS B
R/P PB MODE
FE ON
RF SW P
S/S 5V
ATF LOCK
S/S GND

	20	21	22	23	24	25	26	27	28	29	30	31	32	33
Q · IC	616 IC602 609 610 607 615 617 517	IC601	511	509 504 510 507 620	505 508 626 602 IC501 514 512 503 619 502 515 601 625	624	613	603 606	IC502	604	518	513 630 506 627	605 621 631	623
D	602 604		501	603				601 605		606			607	
ADJ												RV601		

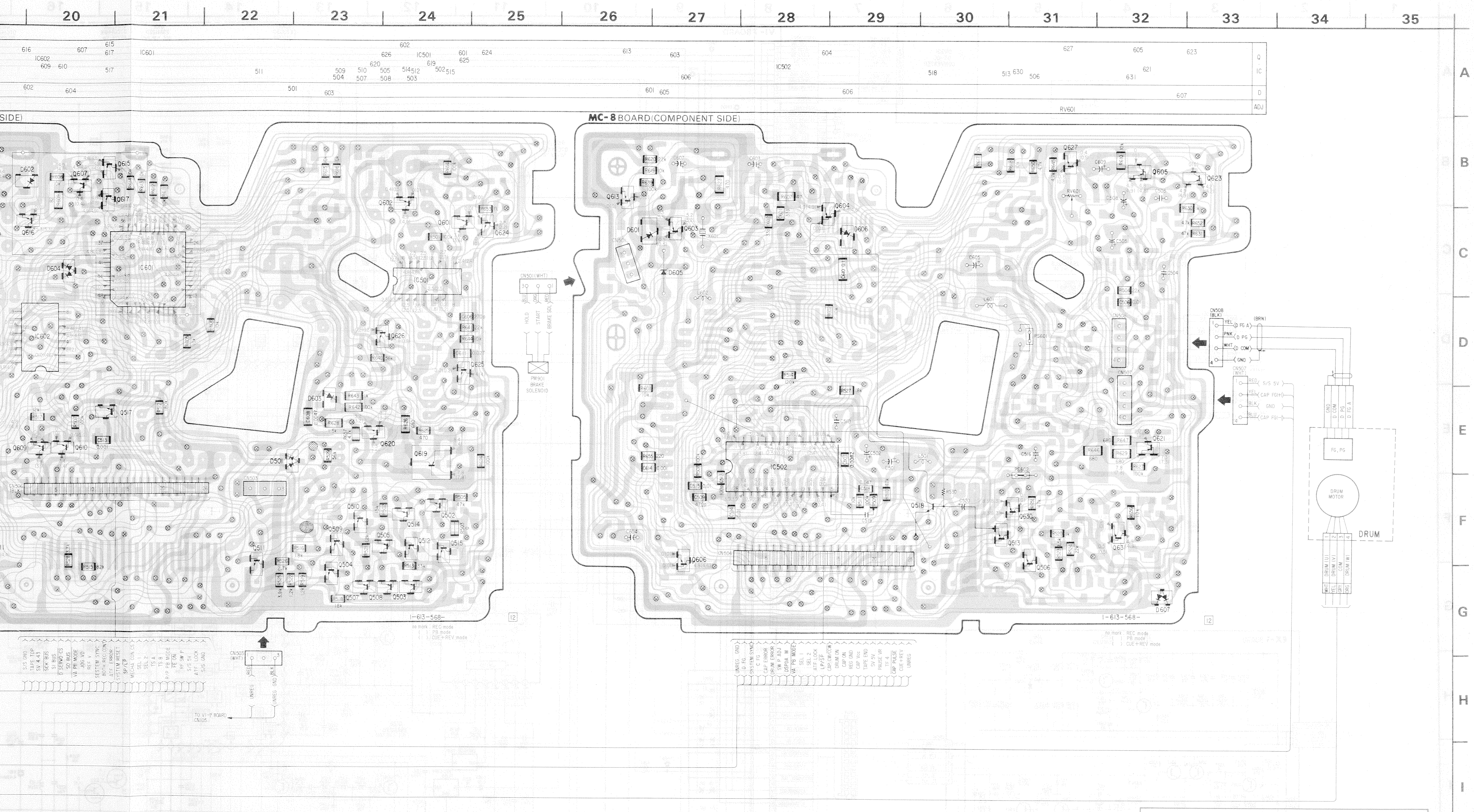

SIDE)
MC-8 BOARD(COMPONENT SIDE)
IC601
IC602
IC501
IC502
CN501(WHT)
BLU ORG RED
HOLD
START
BRAKE SOL
PM901 BRAKE SOLENOID
CN503 (WHT)
RED
BLK
UNREG
UNREG GND
TO VI-7 BOARD CN105
CN506
CN504
CN508 (BLK)
YEL (D FG A)
PNK (D PG)
WHT (D COM)
(GND)
(BRN)
CN507 (WHT)
RED (S/S 5V)
YEL (CAP FG(+))
BLK (GND)
BLU (CAP FG(−))
GND
D COM
D PG
D FG A
FG, PG
DRUM MOTOR
DRUM
DRUM (U) WHT
DRUM (V) YEL
COM GRY
DRUM (W) ORG
1-613-568-
12
no mark REC mode
( ) PB mode
〈 〉 CUE+REV mode
S/S GND
TAPE TOP
SV 4.43
SCK BUS
SI BUS
D SERVO CS
SO BUS
VA PB MODE
JOG VD
REF V
SESTEM SYNC
BOTH REC CONT
ATF ERROR
SYSTEM RESET
SP/LP
MECHA CON CS
SEL 1
SEL 2
TS A
TS B
R/P PB MODE
FE ON
RF SW P
S/S 5V
ATF LOCK
S/S GND
UNREG GND
D FG
SYSTEM SYNC
C FG
CAP ERROR
DRUM ERROR
SW P ADJ
DSPDA M
VA PB MODE
SEL 1
SEL 2
ATF LOCK
LP/SP
CAP CW/CCW
DRUM ON
CAP ON
REG GND
CAP Vcc
TAPE END
SV 5V
PAUSE VR
TF 4
CAP PULSE
CUE+REV
UNREG

Note:
- ⊗ : Through hole.
- ▨ : soldering side
- : B+ pattern
- : component side

When indicating parts by reference number, please include the board name.

Caution:

Pattern face side: (Solder Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the pattern face are indicated.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34
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A
B
C
D
E
F
G
H
I
Q
IC
D
ADJ
SIDE)
MC-8 BOARD (COMPONENT SIDE)
IC601
IC602
IC501
IC502
CN501 (WHT)
HOLD
START
BRAKE SOL
PM901 BRAKE SOLENOID
CN503 (WHT)
UNREG
UNREG GND
TO VI-7 BOARD CN105
CN508 (BLK)
CN507 (WHT)
D FG A
D PG
D COM
GND
S/S 5V
CAP FGH
CAP FG
DRUM MOTOR
FG, PG
DRUM
1-613-568-
no mark : REC mode
( ) : PB mode
[ ] : CUE+REV mode

Note:

- ⊗ : Through hole.
- ▨ : soldering side
- ▨ : B+ pattern
- ▨ : component side

When indicating parts by reference number, please include the board name.

Caution:

Pattern face side: (Solder Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the pattern face are indicated.

SERVO/MECHANISM CONTROL

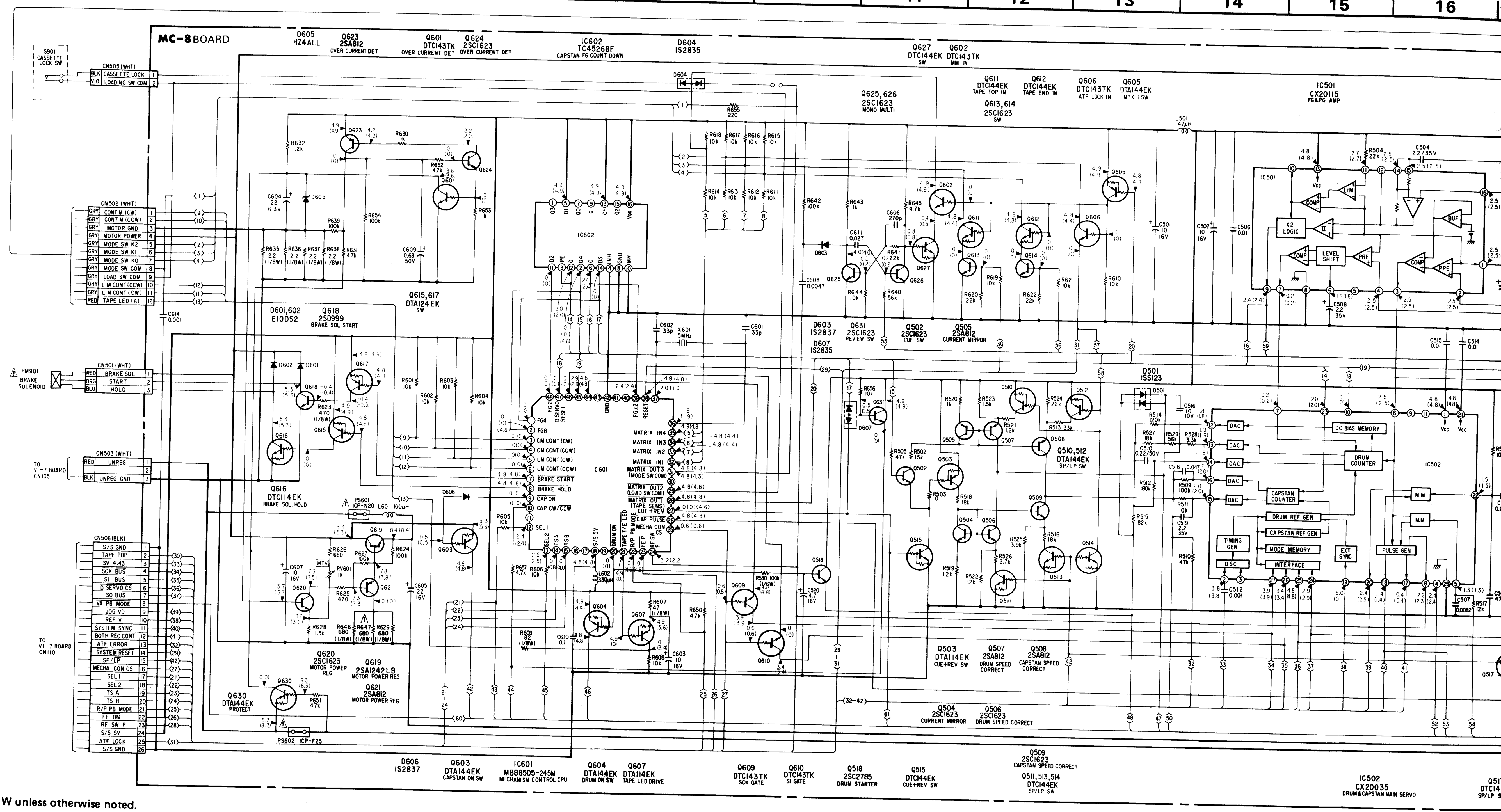
SERVO/MECHANISM CONTROL

MC-8 (SERVO/MECHANISM CONTROL), SV-14 (DRUM MOTOR/CAPSTAN MOTOR DRIVE), MS-4 (MODE SWITCH/MODE CONTROL MOTOR), LS-9 (LOADING SWITCH), LD-1 (TAPE SENSOR LED), RS-5 (LOADING MOTOR/CONTROL MOTOR DRIVE)

– Ref. No. MC-8 BOARD : 1000 series, SV-14, MS-4, LS-9, LD-1 BOARD : 5000 series, RS-5 BOARD : 8000 series –

MC-8BOARD

REF.	MODE	LP REC	LP CUE+REV	SP REC	SP CUE+REV
Q502	B	0	0.6	0	0.6
	C	4.4	0	4.4	0
	E	4.8	0	4.8	0
Q503	B	4.8	—	4.8	—
	C	-0.3	—	-0.3	—
	E	4.8	—	4.8	—
Q504	B	-0.3	—	-0.3	—
	C	-0.3	—	-0.3	—
	E	0	—	0	—
Q505	B	4.4	4.0	4.4	4.0
	C	4.4	4.6	4.4	4.6
	E	4.8	4.0	4.8	4.0
Q506	B	-0.3	—	-0.3	—
	C	1.9	—	1.9	—
	E	0	—	0	—
Q507	B	4.4	—	4.4	—
	C	1.9	—	1.9	—
	E	4.8	—	4.8	—
Q508	B	4.4	—	4.4	—
	C	2.4	—	2.1	—
	E	4.8	—	4.8	—
Q509	B	-0.3	—	-0.3	—
	C	2.4	—	2.1	—
	E	0	—	0	—
Q510	B	4.8	—	0	—
	C	4.8	—	4.8	—
	E	4.8	—	4.8	—
Q511	B	0	—	4.8	—
	C	0	—	0	—
	E	GND	—	GND	—
Q512	B	4.8	—	0	—
	C	4.8	—	4.8	—
	E	4.8	—	4.8	—
Q513	B	0	—	4.8	—
	C	0	—	0	—
	E	GND	—	GND	—
Q514	B	0	—	4.8	—
	C	4.8	—	0	—
	E	GND	—	GND	—
Q515	B	0	4.5	0	4.5
	C	4.8	0	4.8	0
	E	GND	GND	GND	GND
Q517	B	0	—	4.8	—
	C	0.7	—	0	—
	E	GND	—	GND	—


MC-8BOARD
S901 CASSETTE LOCK SW
CN505 (WHT)
CASSETTE LOCK
LOADING SW COM
CN502 (WHT)
CONT M (CW)
CONT M (CCW)
MOTOR GND
MOTOR POWER
MODE SW K2
MODE SW K1
MODE SW K0
MODE SW COM
LOAD SW COM
L M CONT (CCW)
L M CONT (CW)
TAPE LED (A)
PM901 BRAKE SOLENOID
CN501 (WHT)
BRAKE SOL
START
HOLD
TO VI-7 BOARD CN105
CN503 (WHT)
UNREG
UNREG GND
TO VI-7 BOARD CN110
CN506 (BLK)
S/S GND
TAPE TOP
SV 4.43
SCK BUS
SI BUS
D SERVO CS
SO BUS
VA PB MODE
JOG VD
REF V
SYSTEM SYNC
BOTH REC CONT
ATF ERROR
SYSTEM RESET
SP/LP
MECHA CON CS
SEL 1
SEL 2
TS A
TS B
R/P PB MODE
FE ON
RF SW P
S/S 5V
ATF LOCK
S/S GND
D605 HZ4ALL
Q623 2SA812 OVER CURRENT DET
Q601 DTC143TK OVER CURRENT DET
Q624 2SC1623 OVER CURRENT DET
IC602 TC4526BF CAPSTAN FG COUNT DOWN
D604 1S2835
Q627 DTC144EK SW
Q602 DTC143TK MM IN
Q625,626 2SC1623 MONO MULTI
Q611 DTC144EK TAPE TOP IN
Q612 DTC144EK TAPE END IN
Q613,614 2SC1623 SW
Q606 DTC143TK ATF LOCK IN
Q605 DTA144EK MTX 1 SW
IC501 CX20115 FG&PG AMP
D601,602 E10DS2
Q618 2SD999 BRAKE SOL. START
Q615,617 DTA124EK SW
D603 1S2837
D607 1S2835
Q631 2SC1623 REVIEW SW
Q502 2SC1623 CUE SW
Q505 2SA812 CURRENT MIRROR
D501 1SS123
Q616 DTC114EK BRAKE SOL. HOLD
PS601 ICP-N20
L601 100μH
IC601
IC602
Q510,512 DTA144EK SP/LP SW
DRUM REF GEN
CAPSTAN REF GEN
MODE MEMORY
INTERFACE
TIMING GEN
OSC
EXT SYNC
PULSE GEN
CAPSTAN COUNTER
DRUM COUNTER
DC BIAS MEMORY
DAC
IC502
Q630 DTA144EK PROTECT
Q620 2SC1623 MOTOR POWER REG
Q619 2SA1242LB MOTOR POWER REG
Q621 2SA812 MOTOR POWER REG
PS602 ICP-F25
Q503 DTA114EK CUE+REV SW
Q507 2SA812 DRUM SPEED CORRECT
Q508 2SA812 CAPSTAN SPEED CORRECT
Q504 2SC1623 CURRENT MIRROR
Q506 2SC1623 DRUM SPEED CORRECT
D606 1S2837
Q603 DTA144EK CAPSTAN ON SW
IC601 MB88505-245M MECHANISM CONTROL CPU
Q604 DTA144EK DRUM ON SW
Q607 DTA114EK TAPE LED DRIVE
Q609 DTC143TK SCK GATE
Q610 DTC143TK SI GATE
Q518 2SC2785 DRUM STARTER
Q515 DTC144EK CUE+REV SW
Q509 2SC1623 CAPSTAN SPEED CORRECT
Q511,513,514 DTC144EK SP/LP SW
IC502 CX20035 DRUM&CAPSTAN MAIN SERVO

Note:

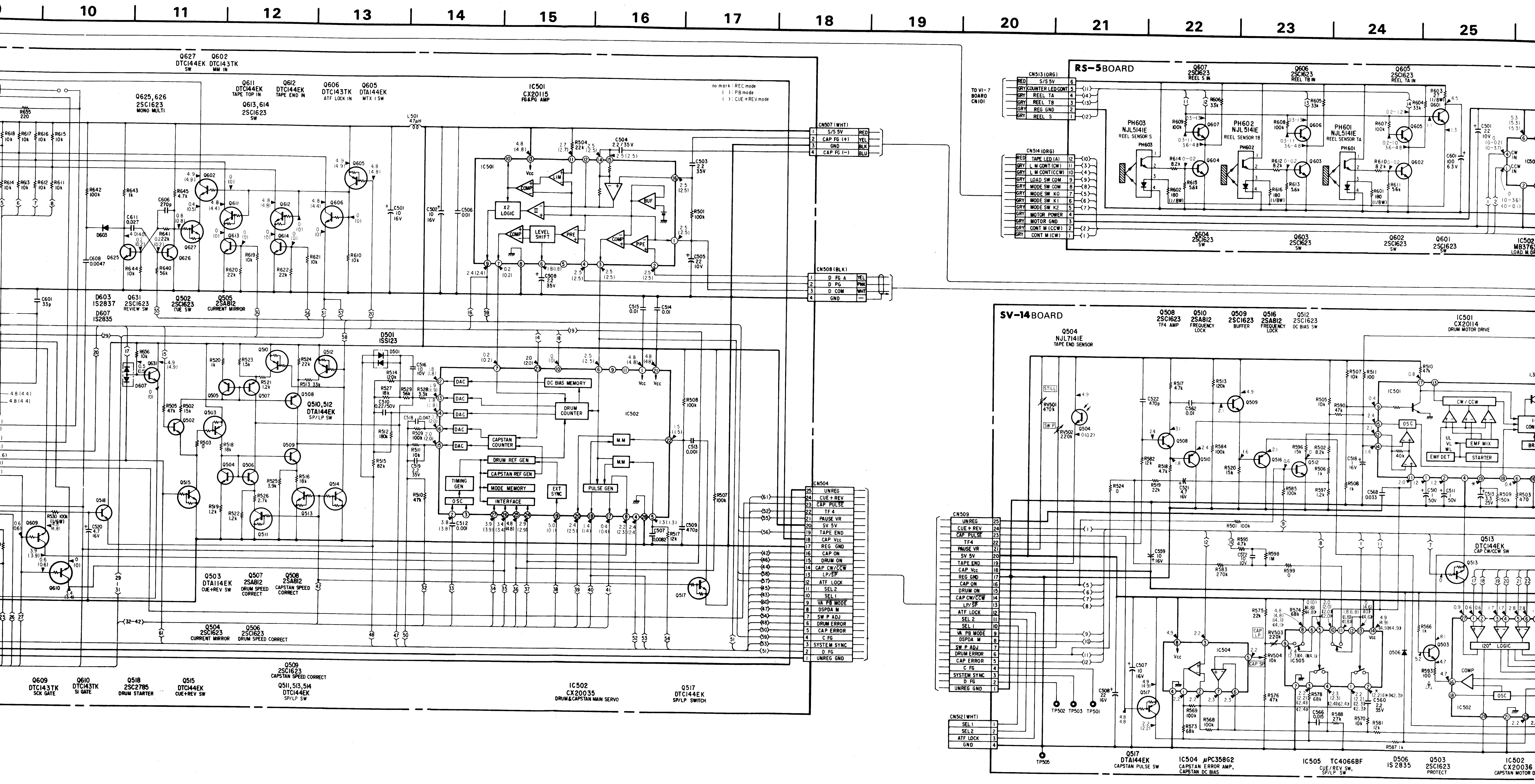
- All resistors are in ohms, 1/10W unless otherwise noted.
- All capacitors are in μF (p:pF) unless otherwise noted. 50V or less are not indicated except for electrolytic capacitors.
- All variable and semi fixed resistors have characteristic curve B, unless otherwise noted.
- ☐ : panel designation.
- ▭ : Nonflammable resistor
- ━━ : B+ bus.
- ☐ : adjustment for repair.
- Voltage and waveform measuring conditions:
  - (1) Sample object: Pattern box color bars.
  - (2) Voltage values: Relative to ground, measured with a DC digital multimeter (impedance 10M-ohm or more).

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

O/MECHANISM CONTROL

OTOR), LS-9 (LOADING SWITCH), LD-1 (TAPE SENSOR LED), RS-5 (LOADING MOTOR/CONTROL MOTOR DRIVE) SCHEMATIC DIAGRAM



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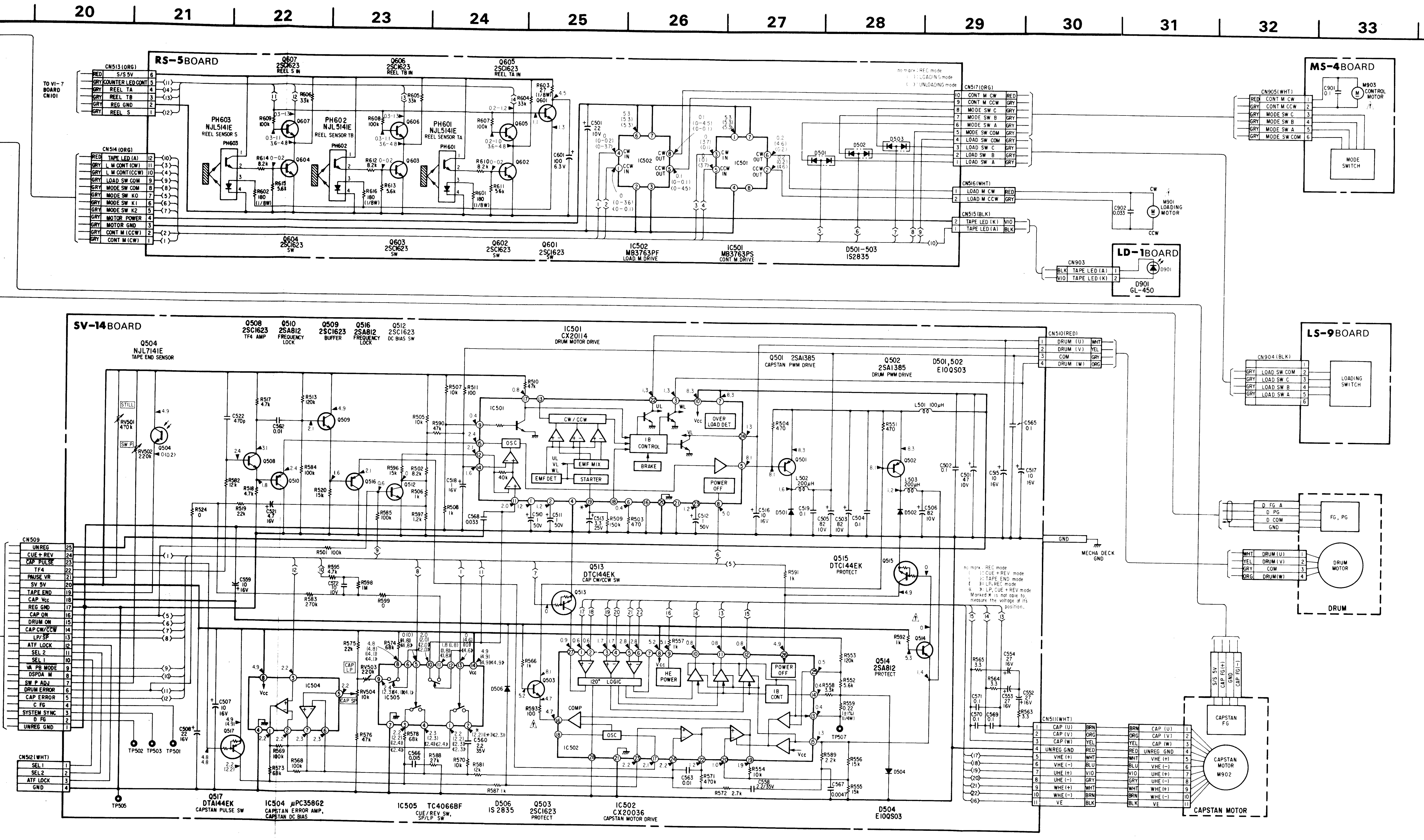
Q627 DTC144EK SW
Q602 DTC143TK MM IN
Q611 DTC144EK TAPE TOP IN
Q612 DTC144EK TAPE END IN
Q606 DTC143TK ATF LOCK IN
Q605 DTA144EK MTX 1 SW
Q625,626 2SC1623 MONO MULTI
Q613,614 2SC1623 SW
IC501 CX20115 FG&PG AMP
L501 47μH
no mark : REC mode
( ) : PB mode
( ) : CUE+REV mode
X2 LOGIC
LIM
COMP
LEVEL SHIFT
PRE
PPE
BUF
CN507 (WHT)
S/S 5V
CAP FG (+)
GND
CAP FG (−)
CN508 (BLK)
D FG A
D PG
D COM
GND
D603 1S2837
D607 1S2835
Q631 2SC1623 REVIEW SW
Q502 2SC1623 CUE SW
Q505 2SA812 CURRENT MIRROR
D501 1SS123
Q510,512 DTA144EK SP/LP SW
DAC
DC BIAS MEMORY
DRUM COUNTER
CAPSTAN COUNTER
DRUM REF GEN
CAPSTAN REF GEN
MODE MEMORY
INTERFACE
TIMING GEN
OSC
EXT SYNC
PULSE GEN
MM
IC502
CN504
UNREG
CUE+REV
CAP PULSE
TF4
PAUSE VR
SV 5V
TAPE END
CAP Vcc
REG GND
CAP ON
DRUM ON
CAP CW/CCW
LP/SP
ATF LOCK
SEL 2
SEL 1
VA PB MODE
DSPDA M
SW P ADJ
DRUM ERROR
CAP ERROR
C FG
SYSTEM SYNC
D FG
UNREG GND
Q503 DTA114EK CUE+REV SW
Q507 2SA812 DRUM SPEED CORRECT
Q508 2SA812 CAPSTAN SPEED CORRECT
Q504 2SC1623 CURRENT MIRROR
Q506 2SC1623 DRUM SPEED CORRECT
Q509 2SC1623 CAPSTAN SPEED CORRECT
Q511,513,514 DTC144EK SP/LP SW
Q609 DTC143TK SCK GATE
Q610 DTC143TK SI GATE
Q518 2SC2785 DRUM STARTER
Q515 DTC144EK CUE+REV SW
IC502 CX20035 DRUM&CAPSTAN MAIN SERVO
Q517 DTC144EK SP/LP SWITCH
TO VI-7 BOARD CN101
RS-5BOARD
CN513 (ORG)
S/S 5V
COUNTER LED CONT
REEL TA
REEL TB
REG GND
REEL S
CN514 (ORG)
TAPE LED (A)
L M CONT (CW)
L M CONT (CCW)
LOAD SW COM
MODE SW COM
MODE SW K0
MODE SW K1
MODE SW K2
MOTOR POWER
MOTOR GND
CONT M (CCW)
CONT M (CW)
Q607 2SC1623 REEL S IN
Q606 2SC1623 REEL TB IN
Q605 2SC1623 REEL TA IN
PH603 NJL5141E REEL SENSOR S
PH602 NJL5141E REEL SENSOR TB
PH601 NJL5141E REEL SENSOR TA
Q604 2SC1623 SW
Q603 2SC1623 SW
Q602 2SC1623 SW
Q601 2SC1623 SW
IC502 MB376 LOAD M DR
SV-14BOARD
Q508 2SC1623 TF4 AMP
Q510 2SA812 FREQUENCY LOCK
Q509 2SC1623 BUFFER
Q516 2SA812 FREQUENCY LOCK
Q512 2SC1623 DC BIAS SW
IC501 CX20114 DRUM MOTOR DRIVE
Q504 NJL7141E TAPE END SENSOR
STILL
SW P
CW/CCW
EMF MIX
EMF DET
STARTER
OSC
CN509
CN512 (WHT)
SEL 1
SEL 2
ATF LOCK
GND
Q513 DTC144EK CAP CW/CCW SW
120° LOGIC
COMP
IC504
IC505
CAP LP
CAP SP
TP502
TP503
TP501
TP505
Q517 DTA144EK CAPSTAN PULSE SW
IC504 μPC358G2 CAPSTAN ERROR AMP, CAPSTAN DC BIAS
IC505 TC4066BF CUE/REV SW, SP/LP SW
D506 1S2835
Q503 2SC1623 PROTECT
IC502 CX20036 CAPSTAN MOTOR D

by refer-
e include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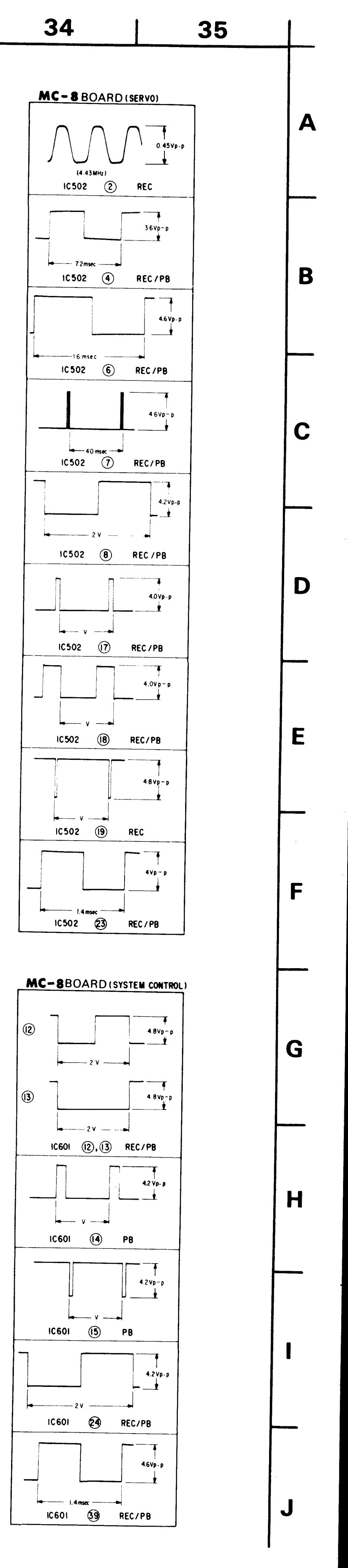
RS-5 BOARD
CN513 (ORG)
TO VI-7 BOARD CN101
S/S 5V
COUNTER LED CONT
REEL TA
REEL TB
REG GND
REEL S
CN514 (ORG)
TAPE LED (A)
L M CONT (CW)
L M CONT (CCW)
LOAD SW COM
MODE SW COM
MODE SW KO
MODE SW K1
MODE SW K2
MOTOR POWER
MOTOR GND
CONT M (CCW)
CONT M (CW)
Q607 2SC1623 REEL S IN
Q606 2SC1623 REEL TB IN
Q605 2SC1623 REEL TA IN
PH603 NJL5141E REEL SENSOR S
PH602 NJL5141E REEL SENSOR TB
PH601 NJL5141E REEL SENSOR TA
Q604 2SC1623 SW
Q603 2SC1623 SW
Q602 2SC1623 SW
Q601 2SC1623 SW
IC502 MB3763PF LOAD M DRIVE
IC501 MB3763PS CONT M DRIVE
D501-503 1S2835
no mark : REC mode
( ) : LOADING mode
( ) : UNLOADING mode
CN517 (ORG)
CONT M CW
CONT M CCW
MODE SW C
MODE SW B
MODE SW A
MODE SW COM
LOAD SW COM
LOAD SW C
LOAD SW B
LOAD SW A
CN516 (WHT)
LOAD M CW
LOAD M CCW
CN515 (BLK)
TAPE LED (K)
TAPE LED (A)
MS-4 BOARD
CN905 (WHT)
M903 CONTROL MOTOR
MODE SWITCH
M901 LOADING MOTOR
CW
CCW
LD-1 BOARD
CN903
D901 GL-450
LS-9 BOARD
CN904 (BLK)
LOADING SWITCH
SV-14 BOARD
Q504 NJL7141E TAPE END SENSOR
Q508 2SC1623 TF4 AMP
Q510 2SA812 FREQUENCY LOCK
Q509 2SC1623 BUFFER
Q516 2SA812 FREQUENCY LOCK
Q512 2SC1623 DC BIAS SW
IC501 CX20114 DRUM MOTOR DRIVE
Q501 2SA1385 CAPSTAN PWM DRIVE
Q502 2SA1385 DRUM PWM DRIVE
D501,502 E10QS03
CN510 (RED)
DRUM (U)
DRUM (V)
COM
DRUM (W)
CW/CCW
OSC
EMF DET
EMF MIX
STARTER
1B CONTROL
BRAKE
OVER LOAD DET
POWER OFF
L501 100μH
GND
MECHA DECK GND
D FG A
D PG
D COM
FG, PG
DRUM MOTOR
DRUM
CN509
UNREG
CUE+REV
CAP PULSE
TF4
PAUSE VR
SV 5V
TAPE END
CAP Vcc
REG GND
CAP ON
DRUM ON
CAP CW/CCW
LP/SP
ATF LOCK
SEL 2
SEL 1
VA PB MODE
DSPDA M
SW P ADJ
DRUM ERROR
CAP ERROR
C FG
SYSTEM SYNC
D FG
UNREG GND
CN512 (WHT)
ATF LOCK
GND
Q513 DTC144EK CAP CW/CCW SW
Q515 DTC144EK PROTECT
Q514 2SA812 PROTECT
no mark : REC mode
( ) : CUE+REV mode
( ) : TAPE END mode
( ) : LP/REC mode
( ) : LP, CUE+REV mode
Marked * is not able to measure the voltage at its position.
120° LOGIC
HE POWER
1B CONT
COMP
IC504
IC505
IC502
TP502
TP503
TP501
TP505
TP507
Q517 DTA144EK CAPSTAN PULSE SW
IC504 μPC358G2 CAPSTAN ERROR AMP, CAPSTAN DC BIAS
IC505 TC4066BF CUE/REV SW, SP/LP SW
D506 1S2835
Q503 2SC1623 PROTECT
IC502 CX20036 CAPSTAN MOTOR DRIVE
D504 E10QS03
CN511 (WHT)
CAP (U)
CAP (V)
CAP (W)
UNREG GND
VHE (+)
VHE (-)
UHE (+)
UHE (-)
WHE (+)
WHE (-)
VE
S/S 5V
CAP FG (+)
CAP FG (-)
CAPSTAN FG
CAPSTAN MOTOR M902
CAPSTAN MOTOR


34
35
A
B
C
D
E
F
G
H
I
J
MC-8 BOARD (SERVO)
0.45Vp-p
(4.43MHz)
IC502 ② REC
3.6Vp-p
7.2msec
IC502 ④ REC/PB
4.6Vp-p
16 msec
IC502 ⑥ REC/PB
4.6Vp-p
40 msec
IC502 ⑦ REC/PB
4.2Vp-p
2V
IC502 ⑧ REC/PB
4.0Vp-p
V
IC502 ⑰ REC/PB
4.0Vp-p
V
IC502 ⑱ REC/PB
4.8Vp-p
IC502 ⑲ REC
4Vp-p
1.4msec
IC502 ㉓ REC/PB
MC-8 BOARD (SYSTEM CONTROL)
⑫
4.8Vp-p
2V
⑬
4.8Vp-p
2V
IC601 ⑫, ⑬ REC/PB
4.2Vp-p
V
IC601 ⑭ PB
4.2Vp-p
V
IC601 ⑮ PB
4.2Vp-p
2V
IC601 ㉔ REC/PB
4.6Vp-p
1.4msec
IC601 ㊴ REC/PB

MODE CONTROL

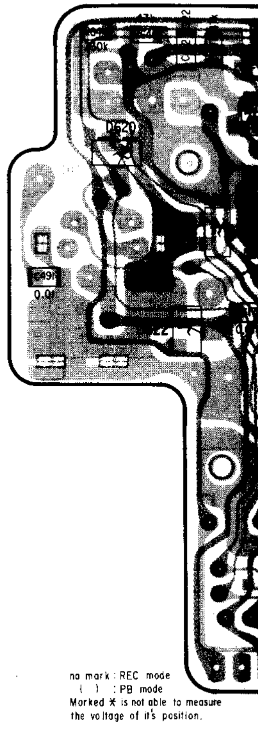
4-6. SK-4 (MODE CONTROL), DS-8 (POWER

– Ref. No. SK-4 BOARD : 5000 series, DS-8 BOAR

1 2 3

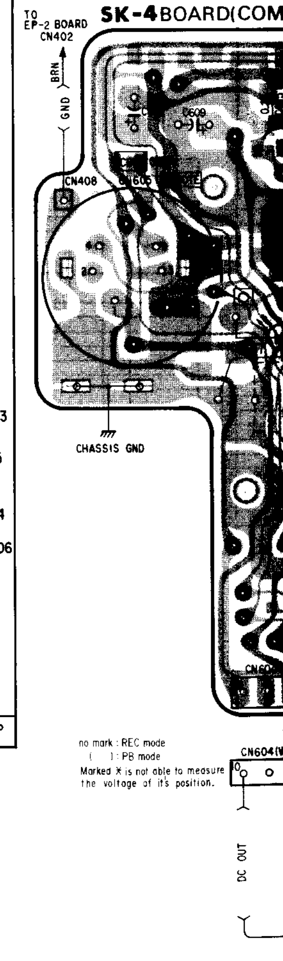
	Q,IC	D	TP
A	IC604 606	601 623	
B	607 IC601 611,IC603 610,IC605	620 621	
C	IC602	622 613 605 606	603 605 604
D	605 604	609 604,612 603	606
E		614	
F		618	
G	612	617 607 602 615 611	603 605
H	603 608,609 613 602 601	616 619 608 610	604 606
I			
J			
	Q,IC	D	TP

SK-4BOARD(SOLD



no mark : REC mode
( ) : PB mode
Marked ✻ is not able to measure the voltage of it's position.

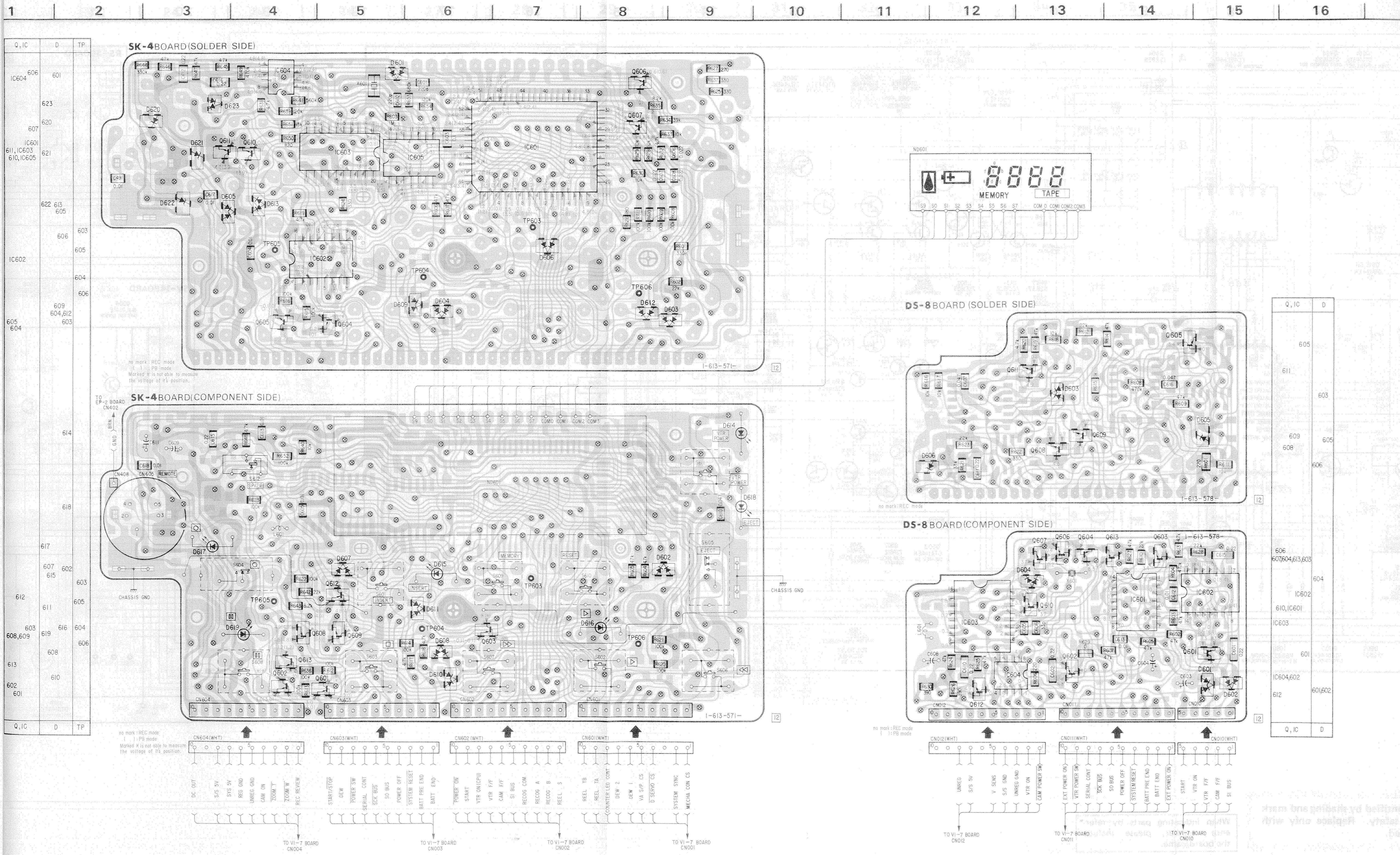
SK-4BOARD(COM


TO
EP-2 BOARD
CN402
BRN
GND
CN408
CHASSIS GND
CN604(
DC OUT

no mark : REC mode
( ) : PB mode
Marked ✻ is not able to measure the voltage of it's position.

(-4 (MODE CONTROL), DS-8 (POWER CONTROL/COMMUNICATION CONTROL C. P. U) PRINTED WIRING BOARDS

Ref. No. SK-4 BOARD : 5000 series, DS-8 BOARD : 7000 series –


1
2
3
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7
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9
10
11
12
13
14
15
16
17
Q, IC
D
TP
SK-4 BOARD (SOLDER SIDE)
SK-4 BOARD (COMPONENT SIDE)
DS-8 BOARD (SOLDER SIDE)
DS-8 BOARD (COMPONENT SIDE)
ND601
MEMORY
TAPE
S9 S0 S1 S2 S3 S4 S5 S6 S7 COM 0 COM1 COM2 COM3
IC601
IC602
IC603
IC604
IC605
TP603
TP604
TP605
TP606
1-613-571-
1-613-578-
12
no mark : REC mode
( ) : PB mode
Marked ※ is not able to measure the voltage of it's position.
TO EP-2 BOARD CN402
CN408
CN605
REMOTE
CHASSIS GND
MEMORY
RESET
INSERT
EJECT
VTR POWER
SP/LP
CN604
CN603
CN602
CN601
CN604(WHT)
DC OUT
S/S 5V
SYS 5V
REG GND
UNREG GND
CAM ON
ZOOM T
ZOOM W
REC REVIEW
TO VI-7 BOARD CN004
CN603(WHT)
START/STOP
DEW
POWER SW
SERIAL CONT
SCK BUS
SO BUS
POWER OFF
SYSTEM RESET
BATT PRE END
BATT END
TO VI-7 BOARD CN003
CN602 (WHT)
POWER ON
START
VTR ON (CPU)
VTR F/F
CAM F/F
SI BUS
RECOG COM
RECOG A
RECOG B
REEL S
TO VI-7 BOARD CN002
CN601(WHT)
REEL TB
REEL TA
COUNTER LED CONT
DEW 2
DEW 1
VA S/P CS
D SERVO CS
SYSTEM SYNC
MECHA CON CS
TO VI-7 BOARD CN001
CN012
CN011
CN010
CN012(WHT)
UNREG
S/S 5V
V SENS
S/S GND
UNREG GND
VTR ON
CAM POWER SW
TO VI-7 BOARD CN012
CN011(WHT)
EXT POWER ON
VTR POWER SW
SERIAL CONT
SCK BUS
SO BUS
POWER OFF
SYSTEM RESET
BATT PRE END
BATT END
EXT POWER ON
TO VI-7 BOARD CN011
CN010(WHT)
START
VTR ON
VTR F/F
CAM F/F
SI BUS
TO VI-7 BOARD CN010

Note:
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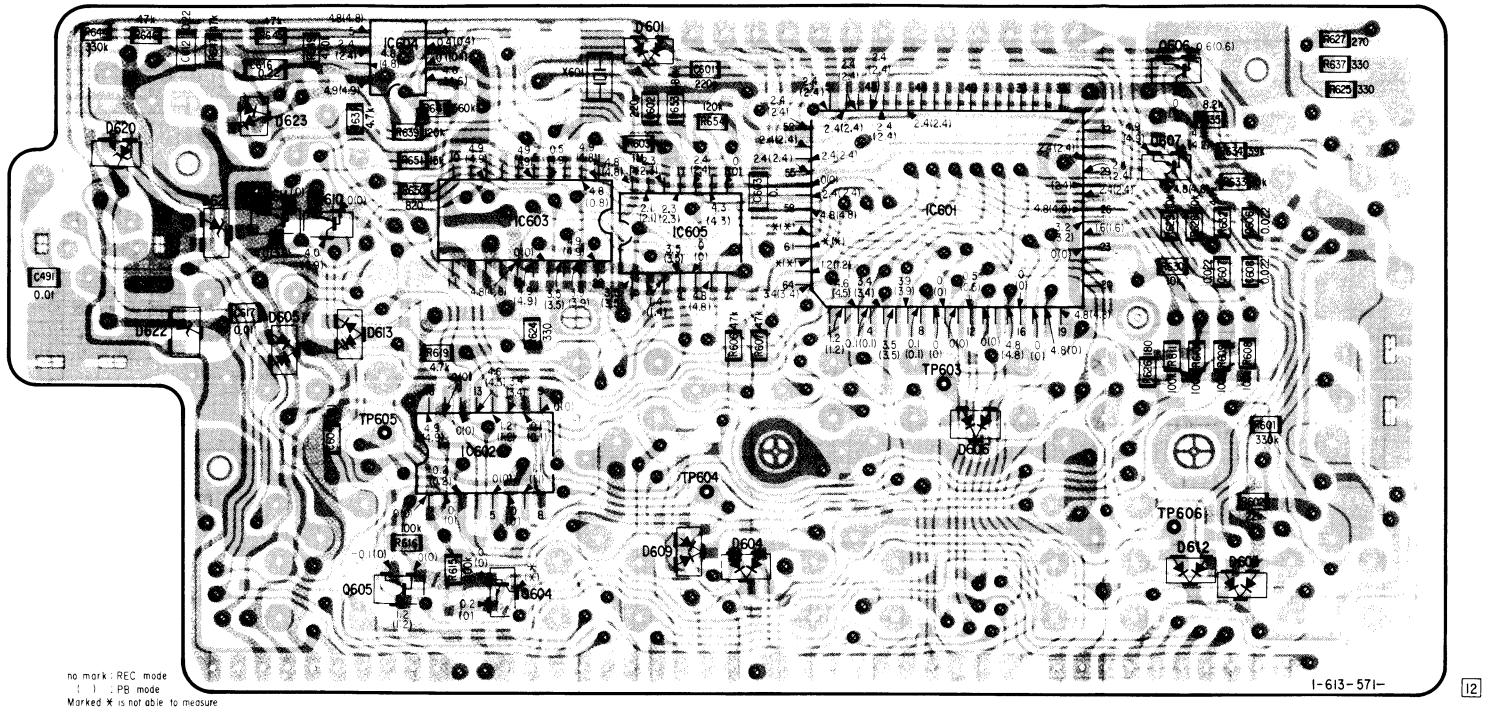
(-4 (MODE CONTROL), DS-8 (POWER CONTROL/COMMUNICATION CONTROL C. P. U) PRINTED WIRING BOARDS

Ref. No. SK-4 BOARD : 5000 series, DS-8 BOARD : 7000 series –

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

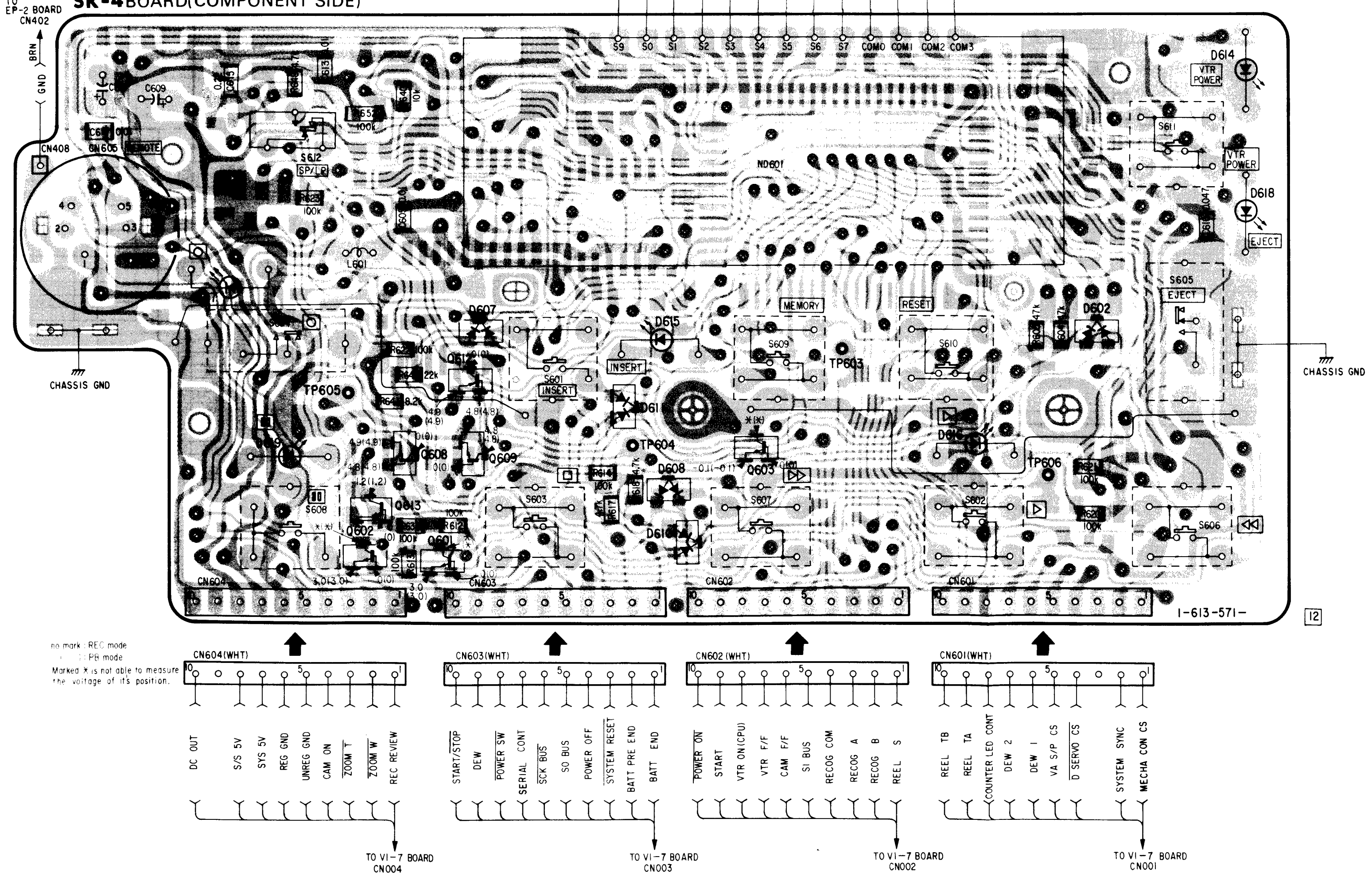
Q, IC	D	TP
IC604 606	601	
	623	
	620	
607		
IC601 611, IC603 610, IC605	621	
	622 613 605	
		603
	606	
		605
IC602		
		604
		606
	609 604,612 603	
605 604		
	614	
	618	
	617	
	607 615	602
		603
612		
		605
	611	
603 608,609	619 616	604
		606
	608	
613		
	610	
602 601		
Q, IC	D	TP

SK-4 BOARD (SOLDER SIDE)

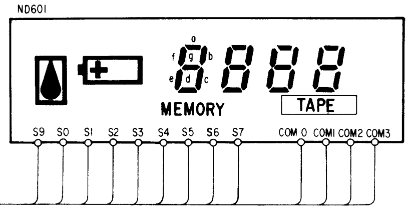

IC604
IC603
IC605
IC601
IC602
D601
D620
D623
D622
D605
D613
D606
D607
D612
D609
D604
Q605
Q604
TP603
TP604
TP605
TP606
C491 0.01
R627 270
R637 330
R625 330
1-613-571-
12

no mark : REC mode
( ) : PB mode
Marked ✕ is not able to measure the voltage of it's position.

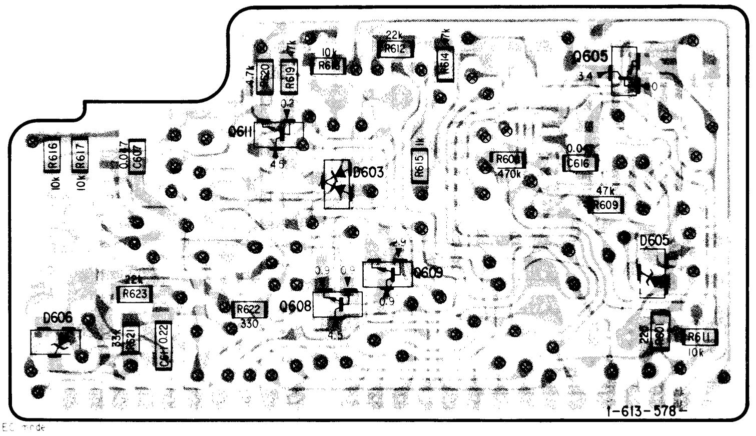
SK-4 BOARD (COMPONENT SIDE)


TO EP-2 BOARD CN402
BRN
GND
CN408
CN605
REMOTE
S612 SP/LP
S611
VTR POWER
D614
D618
EJECT
S605 EJECT
ND601
S9 S0 S1 S2 S3 S4 S5 S6 S7 COM0 COM1 COM2 COM3
L601
Q607
D615
INSERT
S609
MEMORY
RESET
S610
D602
CHASSIS GND
CHASSIS GND
TP605
Q608
Q609
TP604
D608
D616
Q603
TP603
TP606
S608
Q613
Q602
Q601
S603
S607
S602
S606
CN604
CN603
CN602
CN601
1-613-571-
12
CN604(WHT)
DC OUT
S/S 5V
SYS 5V
REG GND
UNREG GND
CAM ON
ZOOM T
ZOOM W
REC REVIEW
TO VI-7 BOARD CN004
CN603(WHT)
START/STOP
DEW
POWER SW
SERIAL CONT
SCK BUS
SO BUS
POWER OFF
SYSTEM RESET
BATT PRE END
BATT END
TO VI-7 BOARD CN003
CN602 (WHT)
POWER ON
START
VTR ON(CPU)
VTR F/F
CAM F/F
SI BUS
RECOG COM
RECOG A
RECOG B
REEL S
TO VI-7 BOARD CN002
CN601(WHT)
REEL TB
REEL TA
COUNTER LED CONT
DEW 2
DEW 1
VA S/P CS
D SERVO CS
SYSTEM SYNC
MECHA CON CS
TO VI-7 BOARD CN001

no mark : REC mode
( ) : PB mode
Marked ✕ is not able to measure the voltage of it's position.

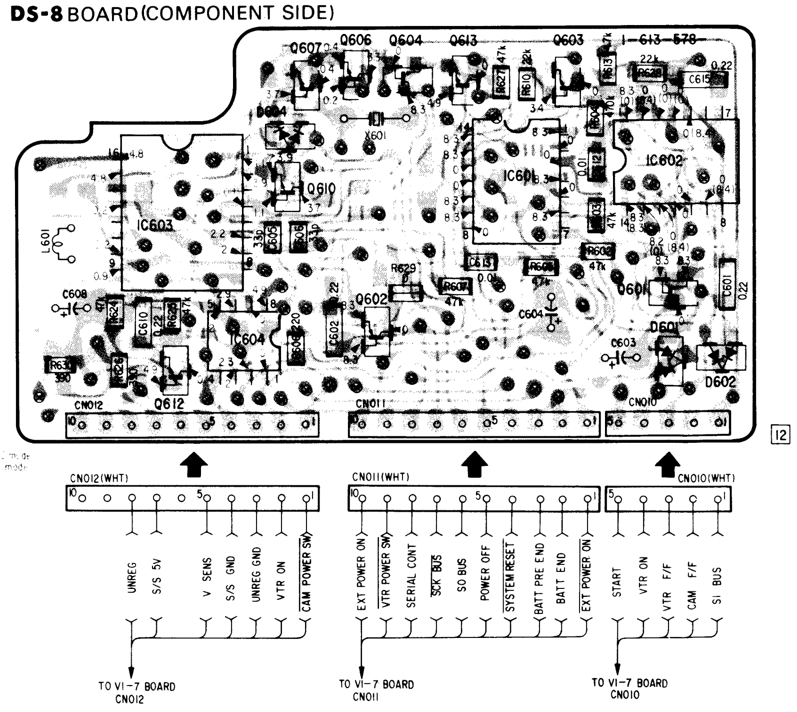

ND601
MEMORY
TAPE
S9 S0 S1 S2 S3 S4 S5 S6 S7 COM 0 COM1 COM2 COM3

DS-8 BOARD (SOLDER SIDE)


Q605
Q611
D603
Q609
Q608
D605
D606
R616
R617
R612
R623
R622
R609
R611
1-613-578
12

no mark : REC mode

DS-8 BOARD (COMPONENT SIDE)


Q607
Q606
Q604
Q613
Q603
1-613-578
IC603
IC601
IC602
L601
Q610
Q602
Q601
Q604
Q612
D601
D602
C608
C603
C604
CN012
CN011
CN010
12
CN012(WHT)
UNREG
S/S 5V
V SENS
S/S GND
UNREG GND
VTR ON
CAM POWER SW
TO VI-7 BOARD CN012
CN011(WHT)
EXT POWER ON
VTR POWER SW
SERIAL CONT
SCK BUS
SO BUS
POWER OFF
SYSTEM RESET
BATT PRE END
BATT END
EXT POWER ON
TO VI-7 BOARD CN011
CN010(WHT)
START
VTR ON
VTR F/F
CAM F/F
SI BUS
TO VI-7 BOARD CN010

no mark : REC mode
( ) : PB mode

Q, IC	D
	605
611	
	603
609 608	
	605
	606
606 607,604,613,603	
	604
IC602	
610, IC601	
IC603	
601	
IC604,602	
	601,602
612	
Q, IC	D

Note:
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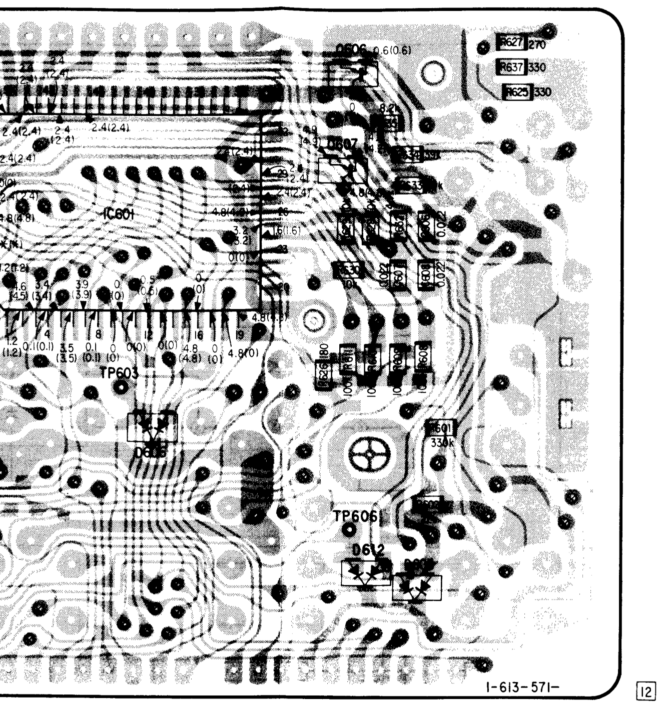
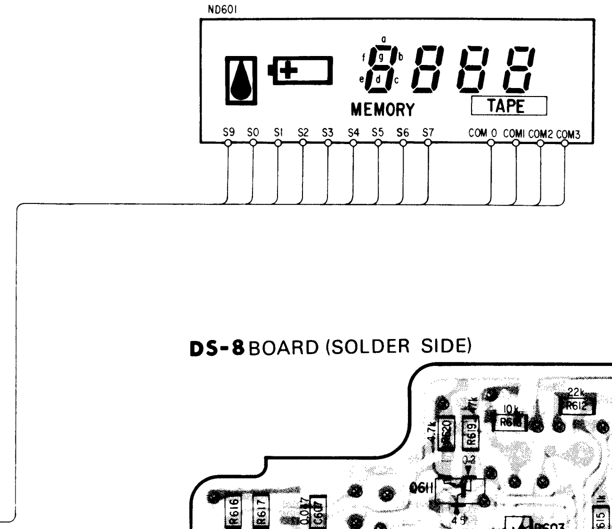
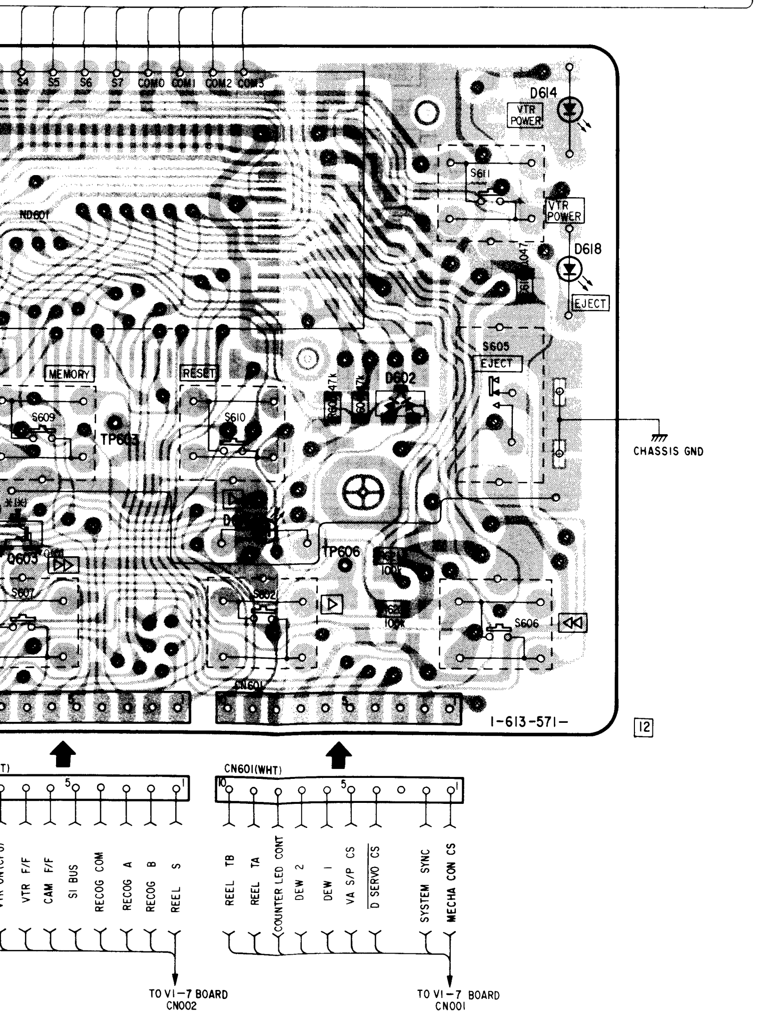
U) **PRINTED WIRING BOARDS**

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

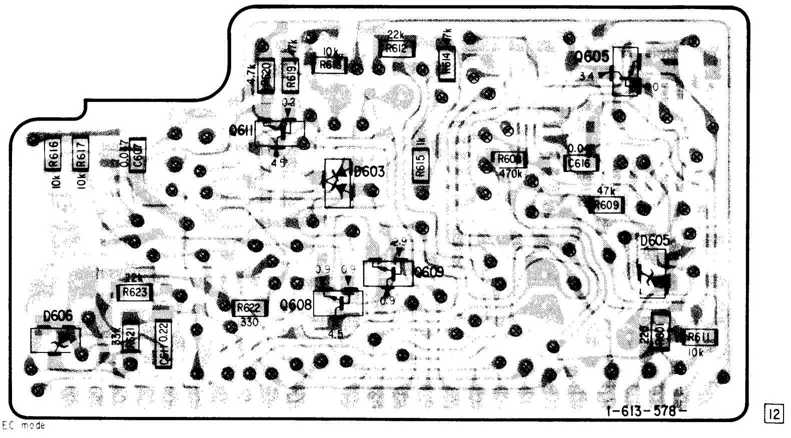
A B C D E F G H I J


IC601
TP603
TP606
D612
R627 270
R637 330
R625 330
R601 330k
1-613-571-
12

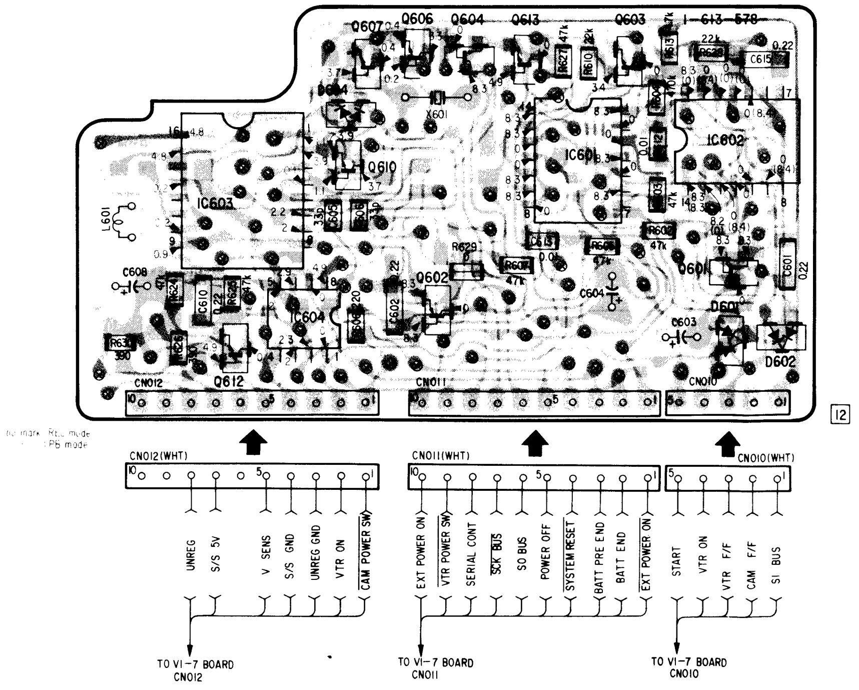

ND601
MEMORY
TAPE
S9 S0 S1 S2 S3 S4 S5 S6 S7 COM 0 COM1 COM2 COM3

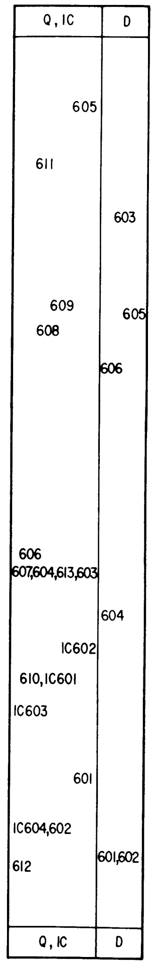

S4 S5 S6 S7 COM0 COM1 COM2 COM3
D614
VTR POWER
S611
VTR POWER
D618
EJECT
ND601
MEMORY
RESET
S605
EJECT
D602
S609
TP603
S610
CHASSIS GND
TP606
S606
S607
1-613-571-
12
CN601(WHT)
VTR F/F
CAM F/F
SI BUS
RECOG COM
RECOG A
RECOG B
REEL S
REEL TB
REEL TA
COUNTER LED CONT
DEW 2
DEW 1
VA S/P CS
D SERVO CS
SYSTEM SYNC
MECHA CON CS
TO VI-7 BOARD CN002
TO VI-7 BOARD CN001

DS-8 BOARD (SOLDER SIDE)

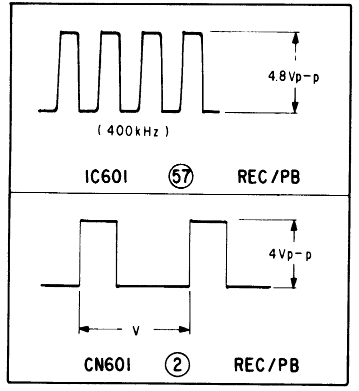

Q605
Q611
Q603
R616
R617
R615
R609
Q605
Q609
Q608
R622 330
R623
Q606
R611 10k
1-613-578-
12
no mark: REC mode

DS-8 BOARD (COMPONENT SIDE)

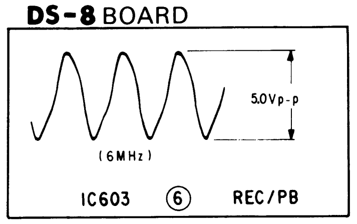

Q607 Q606 Q604 Q613 Q603 1-613-578-
IC603
L601
Q610
IC601
IC602
Q612
IC604
Q602
Q601
D601
D602
C608
R629
12
no mark: Rec mode
( ): Pb mode
CN012(WHT)
UNREG
S/S 5V
V SENS
S/S GND
UNREG GND
VTR ON
CAM POWER SW
CN011(WHT)
EXT POWER ON
VTR POWER SW
SERIAL CONT
SCK BUS
SO BUS
POWER OFF
SYSTEM RESET
BATT PRE END
BATT END
EXT POWER ON
CN010(WHT)
START
VTR ON
VTR F/F
CAM F/F
SI BUS
TO VI-7 BOARD CN012
TO VI-7 BOARD CN011
TO VI-7 BOARD CN010


Q, IC
D
605
611
603
609
608
605
606
606
607,604,613,603
604
IC602
610, IC601
IC603
601
IC604,602
612
601,602
Q, IC
D

SK-4 BOARD (SYSTEM CONTROL)



DS-8 BOARD



Note:

- ⊗ : Through hole.
- : soldering side
- : B+ pattern
- : component side

Caution:

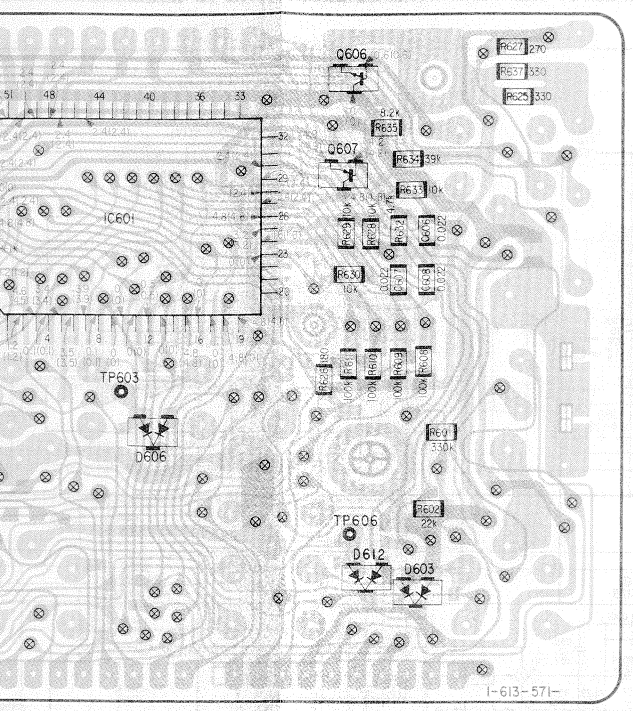
Pattern face side: (Solder Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the pattern face are indicated.

When indicating parts by reference number, please include the board name.

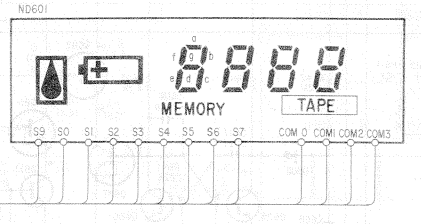
(U) PRINTED WIRING BOARDS

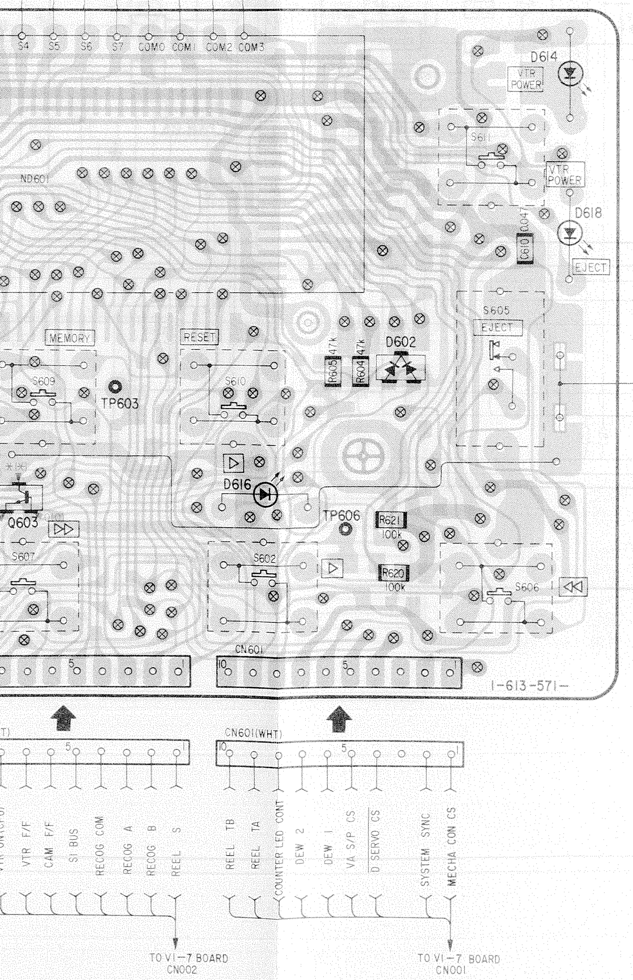
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

A B C D E F G H I J


Q606
R627 270
R637 330
R625 330
Q607
R635
R634 39k
R633 10k
IC601
R630 10k
TP603
D606
R601 330k
TP606
R602 22k
D612
D603
1-613-571-

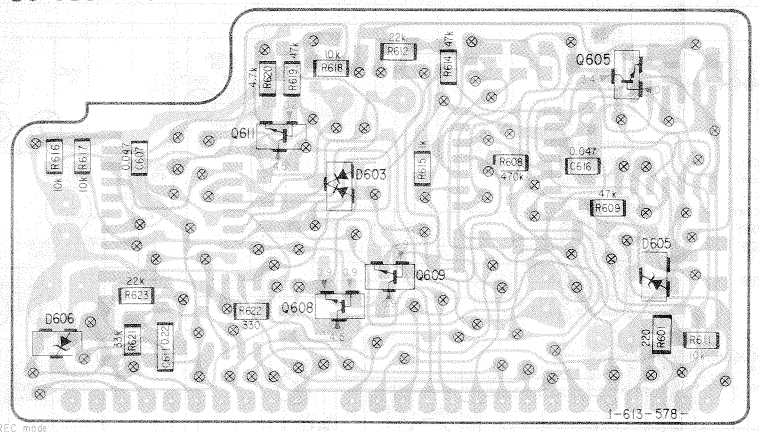
12


ND601
MEMORY
TAPE
S9 S0 S1 S2 S3 S4 S5 S6 S7 COM 0 COM1 COM2 COM3


S4 S5 S6 S7 COM0 COM1 COM2 COM3
ND601
D614
VTR POWER
VTR POWER
D618
EJECT
MEMORY
RESET
S609
TP603
S605
EJECT
D602
CHASSIS GND
Q603
D616
TP606
R621 10k
R620 100k
S602
S606
CN601
1-613-571-
CN601(WHT)
VTR F/F
CAM F/F
SI BUS
RECOG COM
RECOG A
RECOG B
REEL S
REEL TB
REEL TA
COUNTER LED CONT
DEW 2
DEW 1
VA S/P CS
D SERVO CS
SYSTEM SYNC
MECHA CON CS
TO VI-7 BOARD CN002
TO VI-7 BOARD CN001

12

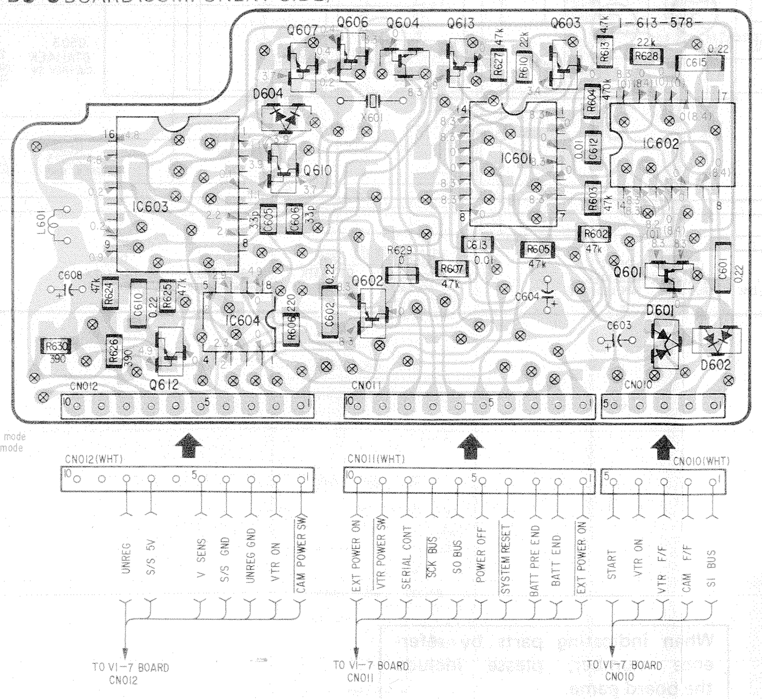
DS-8 BOARD (SOLDER SIDE)


R612 22k
R618 10k
R614 47k
Q605
Q611
R616
R617
D603
R608 47k
C616 0.047
R609 47k
D605
Q609
R623 22k
R622 330
Q608
D606
R621
R611 10k
1-613-578-

12

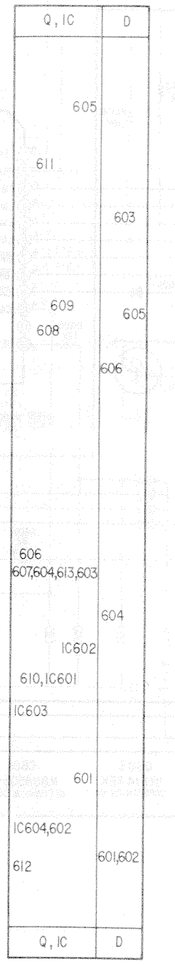
no mark : REC mode

DS-8 BOARD (COMPONENT SIDE)

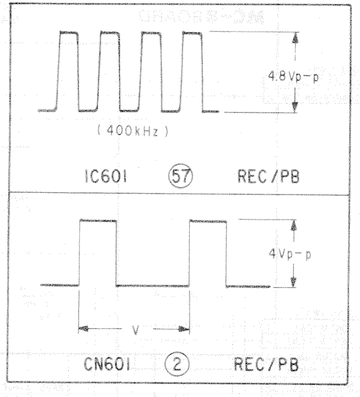

Q607
Q606
Q604
Q613
Q603
1-613-578-
R628 22k
C615
D604
X601
IC601
IC602
Q610
IC603
L601
C608
C604
Q602
R629
R631 47k
R613
R605 47k
R602
Q601
C603
D601
D602
R630 390
R626 390
Q612
CN012
CN011
CN010
CN012(WHT)
UNREG
S/S 5V
V SENS
S/S GND
UNREG GND
VTR ON
CAM POWER SW
CN011(WHT)
EXT POWER ON
VTR POWER SW
SERIAL CONT
SCK BUS
SO BUS
POWER OFF
SYSTEM RESET
BATT PRE END
BATT END
EXT POWER ON
CN010(WHT)
START
VTR ON
VTR F/F
CAM F/F
SI BUS
TO VI-7 BOARD CN012
TO VI-7 BOARD CN011
TO VI-7 BOARD CN010

12

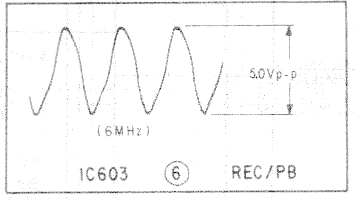
no mark : REC mode
( ) : PB mode


Q, IC
D
605
611
603
609
608
605
606
606
607,604,613,603
604
IC602
610,IC601
IC603
601
IC604,602
612
601,602
Q, IC
D

SK-4 BOARD (SYSTEM CONTROL)



DS-8 BOARD



Note:

- ⊗ : Through hole.
- ▨ : soldering side
- ▨ : B+ pattern
- ▨ : component side

Caution:

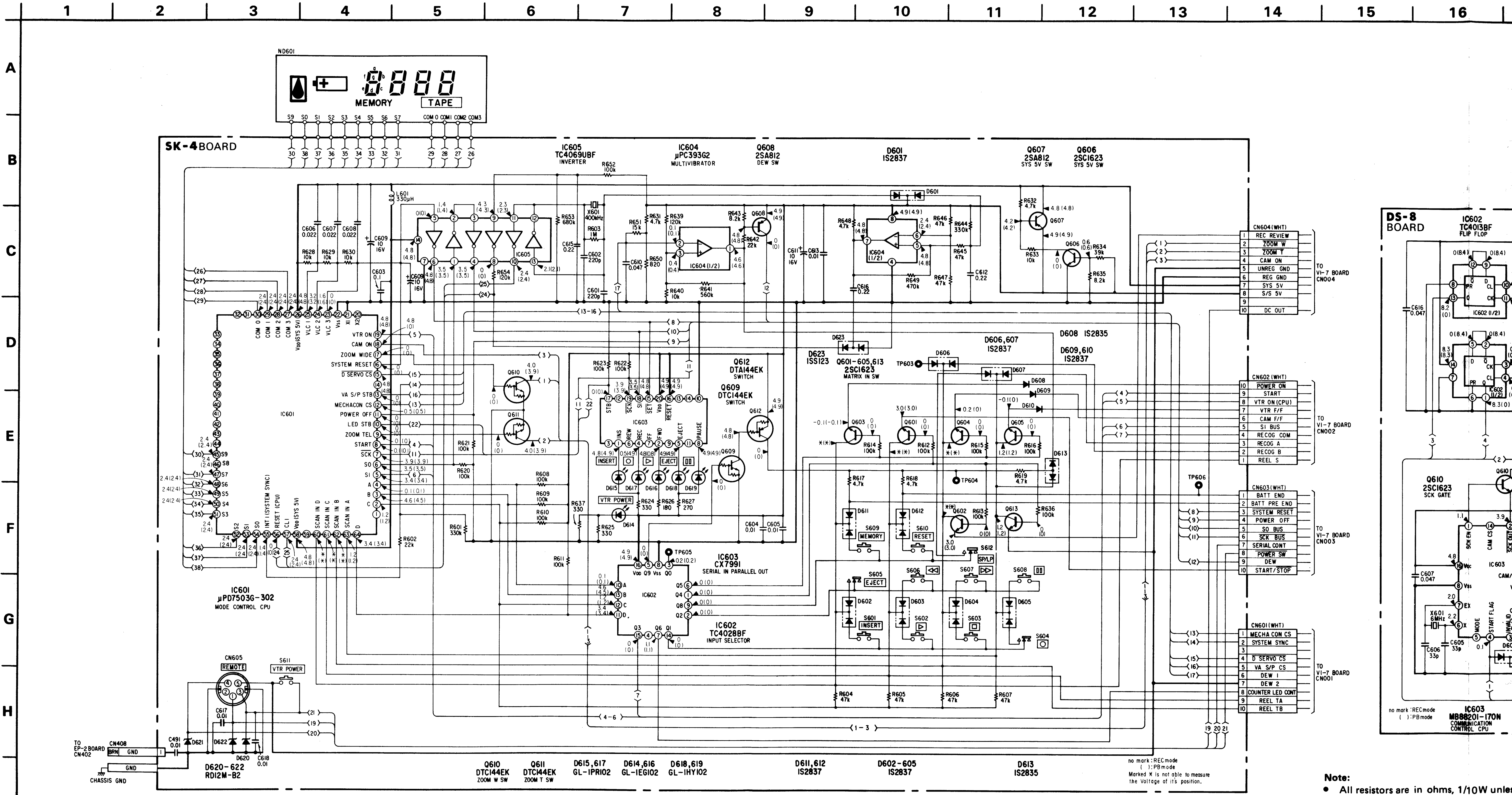
Pattern face side: (Solder Side) Parts on the pattern face side seen from the pattern face are indicated.

Parts face side: (Component Side) Parts on the parts face side seen from the pattern face are indicated.

When indicating parts by reference number, please include the board name.

SK-4 (MODE CONTROL), DS-8 (POWER CONTROL/COMMUNICATION CONTROL C. P. U) SCHEMATIC DIAGRAM

– Ref. No. SK-4 BOARD : 5000 series, DS-8 BOARD : 7000 series –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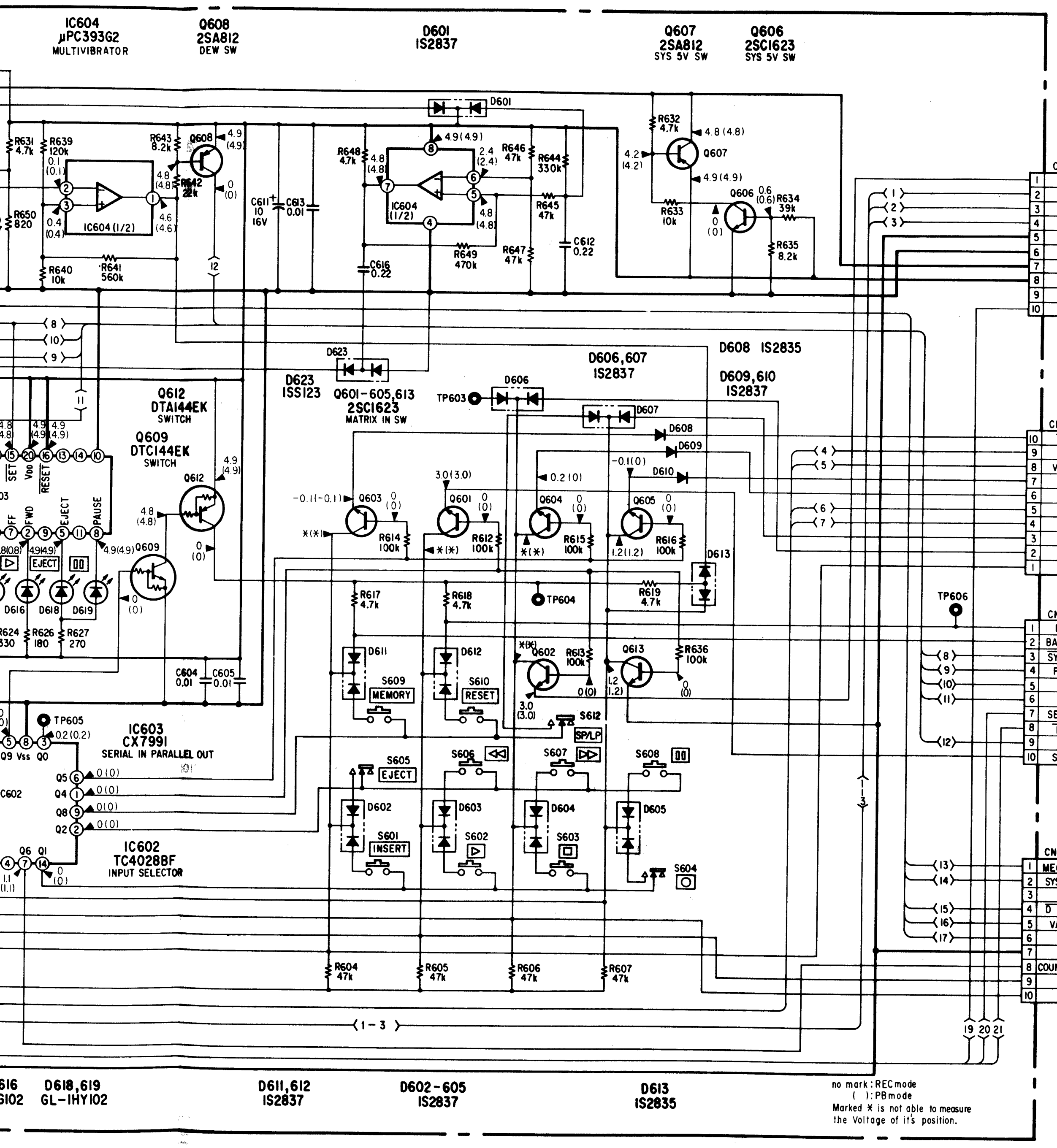
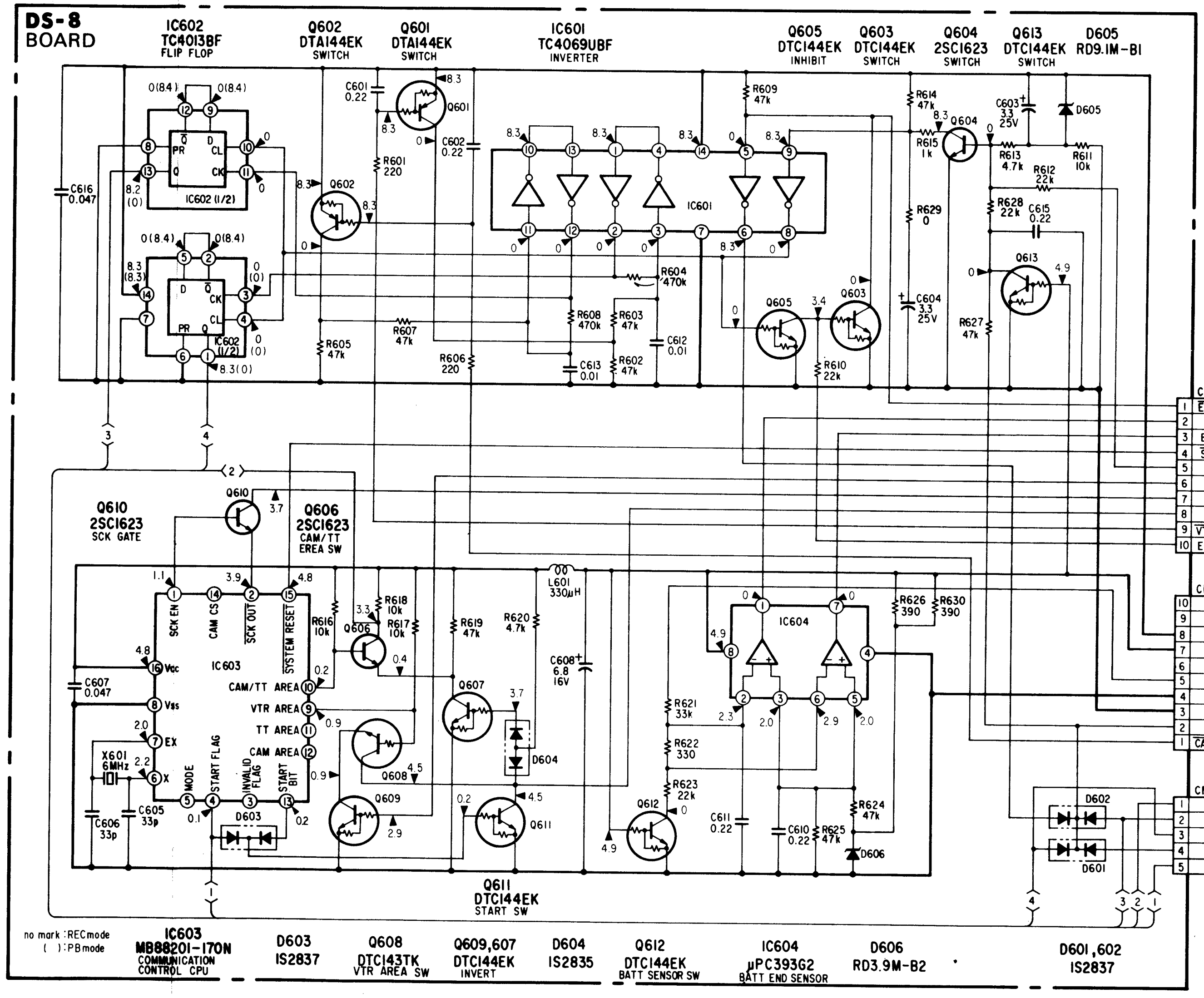
14
15
16
A
B
C
D
E
F
G
H
I
J
ND601
MEMORY
TAPE
S9 S0 S1 S2 S3 S4 S5 S6 S7 COM 0 COM1 COM2 COM3
SK-4 BOARD
IC605 TC4069UBF INVERTER
IC604 μPC393G2 MULTIVIBRATOR
Q608 2SA812 DEW SW
D601 1S2837
Q607 2SA812 SYS 5V SW
Q606 2SC1623 SYS 5V SW
L601 330μH
X601 400kHz
CN604 (WHT)
REC REVIEW
ZOOM W
ZOOM T
CAM ON
UNREG GND
REG GND
SYS 5V
S/S 5V
DC OUT
TO VI-7 BOARD CN004
IC601
VTR ON
CAM ON
ZOOM WIDE
SYSTEM RESET
D SERVO CS
VA S/P STB
MECHACON CS
POWER OFF
LED STB
ZOOM TEL
START
SCK
SO
SI
A
B
C
COM 0
COM 1
COM 2
COM 3
VDD (SYS 5V)
VLC 1
VLC 2
VLC 3
VSS
XI
X2
INT (SYSTEM SYNC)
RESET (CPU)
CL1
VDD (SYS 5V)
SCAN IN D
SCAN IN C
SCAN IN B
SCAN IN A
D
Q610 DTC144EK ZOOM W SW
Q611 DTC144EK ZOOM T SW
IC603 CX7991 SERIAL IN PARALLEL OUT
STB SCK SI SET VDD RESET
INS REW REC FF PLAY FWD EJECT PAUSE
INSERT
EJECT
VTR POWER
D614
D615 D617 D616 D618 D619
Q612 DTA144EK SWITCH
Q609 DTC144EK SWITCH
D623 1SS123
Q601-605,613 2SC1623 MATRIX IN SW
D606,607 1S2837
D608 1S2835
D609,610 1S2837
TP603
TP604
TP605
TP606
CN602 (WHT)
POWER ON
START
VTR ON (CPU)
VTR F/F
CAM F/F
SI BUS
RECOG COM
RECOG A
RECOG B
REEL S
TO VI-7 BOARD CN002
CN603 (WHT)
BATT END
BATT PRE END
SYSTEM RESET
POWER OFF
SO BUS
SCK BUS
SERIAL CONT
POWER SW
DEW
START/STOP
TO VI-7 BOARD CN003
S609 MEMORY
S610 RESET
S612 SP/LP
S605 EJECT
S606
S607
S608
S601 INSERT
S602
S603
S604
IC602 TC4028BF INPUT SELECTOR
VDD Q9 VSS Q0
CN601 (WHT)
MECHA CON CS
SYSTEM SYNC
D SERVO CS
VA S/P CS
DEW I
DEW 2
COUNTER LED CONT
REEL TA
REEL TB
TO VI-7 BOARD CN001
IC601 μPD7503G-302 MODE CONTROL CPU
CN605 REMOTE
S611 VTR POWER
TO EP-2 BOARD CN402
CN408
BRN
GND
CHASSIS GND
D620-622 RD12M-B2
D615,617 GL-1PR102
D614,616 GL-1EG102
D618,619 GL-1HY102
D611,612 1S2837
D602-605 1S2837
D613 1S2835
no mark : REC mode
( ) : PB mode
Marked ✻ is not able to measure the Voltage of its position.
DS-8 BOARD
IC602 TC4013BF FLIP FLOP
Q610 2SC1623 SCK GATE
IC603
X601 6MHz
IC603 MB88201-170N COMMUNICATION CONTROL CPU

Note:

- All resistors are in ohms, 1/10W unle
- All capacitors are in μF (p:pF) unless 50V or less are not indicated except
- All variable and semi fixed resistors h unless otherwise noted.
- ▭ : panel designation.


IC604 μPC393G2 MULTIVIBRATOR
Q608 2SA812 DEW SW
D601 1S2837
Q607 2SA812 SYS 5V SW
Q606 2SC1623 SYS 5V SW
CN604(WHT)
REC REVIEW
ZOOM W
ZOOM T
CAM ON
UNREG GND
REG GND
SYS 5V
S/S 5V
DC OUT
TO VI-7 BOARD CN004
D623 1SS123
Q601-605,613 2SC1623 MATRIX IN SW
D606,607 1S2837
D608 1S2835
D609,610 1S2837
Q612 DTA144EK SWITCH
Q609 DTC144EK SWITCH
CN602(WHT)
POWER ON
START
VTR ON(CPU)
VTR F/F
CAM F/F
SI BUS
RECOG COM
RECOG A
RECOG B
REEL S
TO VI-7 BOARD CN002
CN603(WHT)
BATT END
BATT PRE END
SYSTEM RESET
POWER OFF
SO BUS
SCK BUS
SERIAL CONT
POWER SW
DEW
START/STOP
TO VI-7 BOARD CN003
S609 MEMORY
S610 RESET
S612 SP/LP
S605 EJECT
S606
S607
S608
S601 INSERT
S602
S603
S604
IC603 CX7991 SERIAL IN PARALLEL OUT
IC602 TC4028BF INPUT SELECTOR
TP603
TP604
TP605
TP606
CN601(WHT)
MECHA CON CS
SYSTEM SYNC
D SERVO CS
VA S/P CS
DEW 1
DEW 2
COUNTER LED CONT
REEL TA
REEL TB
TO VI-7 BOARD CN001
D616 GL-1HY102
D618,619 GL-1HY102
D611,612 1S2837
D602-605 1S2837
D613 1S2835
no mark : REC mode
( ) : PB mode
Marked ✻ is not able to measure the Voltage of it's position.


DS-8 BOARD
IC602 TC4013BF FLIP FLOP
Q602 DTA144EK SWITCH
Q601 DTA144EK SWITCH
IC601 TC4069UBF INVERTER
Q605 DTC144EK INHIBIT
Q603 DTC144EK SWITCH
Q604 2SC1623 SWITCH
Q613 DTC144EK SWITCH
D605 RD9.1M-B1
Q610 2SC1623 SCK GATE
Q606 2SC1623 CAM/TT EREA SW
IC603
IC604
CN011(WHT)
EXT POWER ON
BATT END
BATT PRE END
SYSTEM RESET
POWER OFF
SO BUS
SCK BUS
SERIAL CONT
VTR POWER SW
EXT POWER ON
TO VI-7 BOARD CN011
CN012(WHT)
UNREG
S/S 5V
V SENS
S/S GND
UNREG GND
VTR ON
CAM POWER SW
TO VI-7 BOARD CN012
CN010(WHT)
SI BUS
CAM F/F
VTR F/F
VTR ON
START
TO VI-7 BOARD CN010
Q611 DTC144EK START SW
no mark : REC mode
( ) : PB mode
IC603 MB88201-170N COMMUNICATION CONTROL CPU
D603 1S2837
Q608 DTC143TK VTR AREA SW
Q609,607 DTC144EK INVERT
D604 1S2835
Q612 DTC144EK BATT SENSOR SW
IC604 μPC393G2 BATT END SENSOR
D606 RD3.9M-B2
D601,602 1S2837

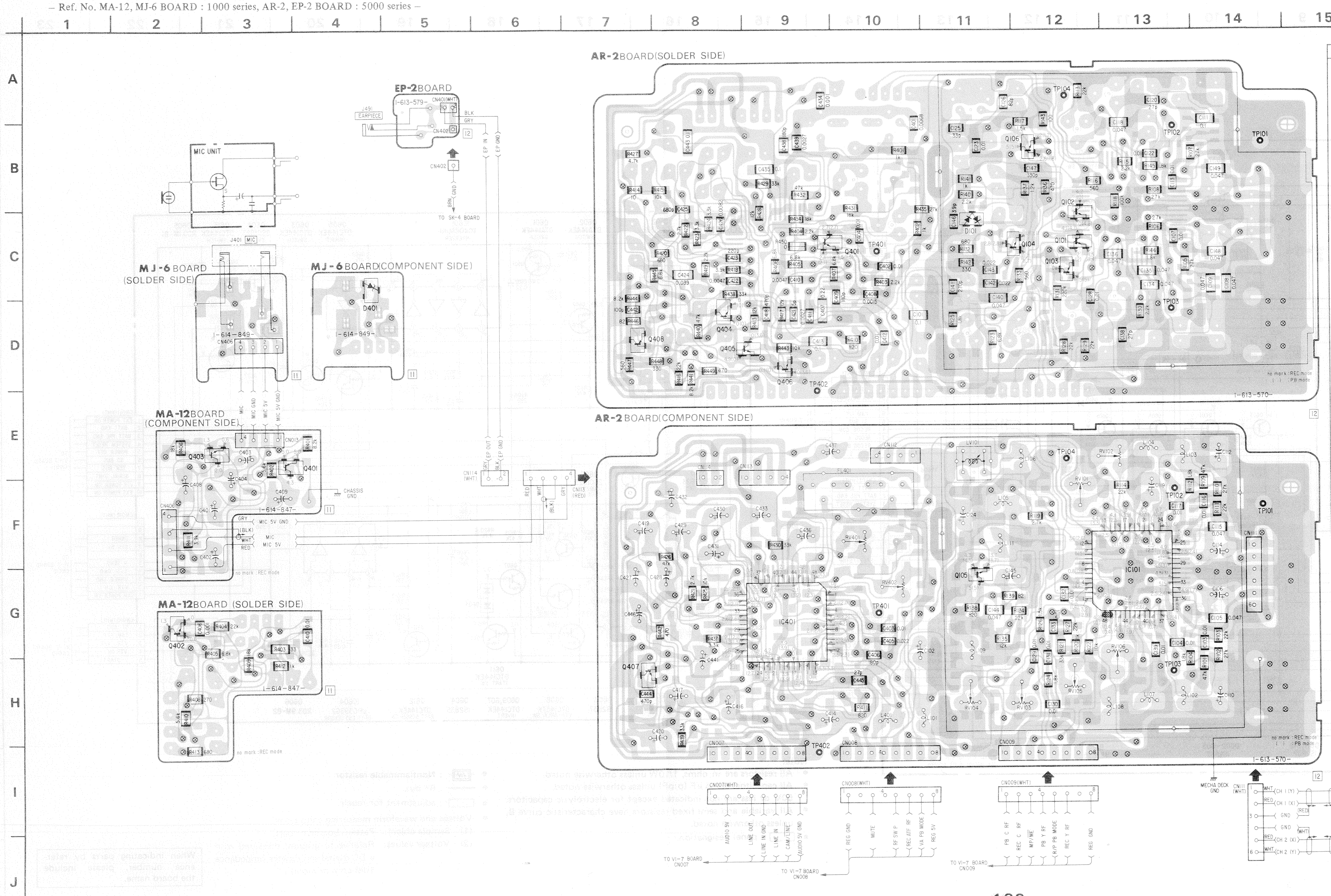
Note:

- All resistors are in ohms, 1/10W unless otherwise noted.
- All capacitors are in μF (p:pF) unless otherwise noted. 50V or less are not indicated except for electrolytic capacitors.
- All variable and semi fixed resistors have characteristic curve B, unless otherwise noted.
- ▭ : panel designation.
- ▭ : Nonflammable resistor
- —— : B+ bus.
- ▭ : adjustment for repair.
- Voltage and waveform measuring conditions:
  - (1) Sample object: Pattern box color bars.
  - (2) Voltage values: Relative to ground, measured with a DC digital multimeter (impedance 10M-ohm or more).

When indicating parts by reference number, please include the board name.

4-7. MA-12 (MIC AMP), MJ-6 (MIC INPUT), AR-2 (AUDIO SIGNAL PROCESS/PB PROCESS), EP-2 (EARPIECE OUTPUT) PRINTED WIRING BOARDS

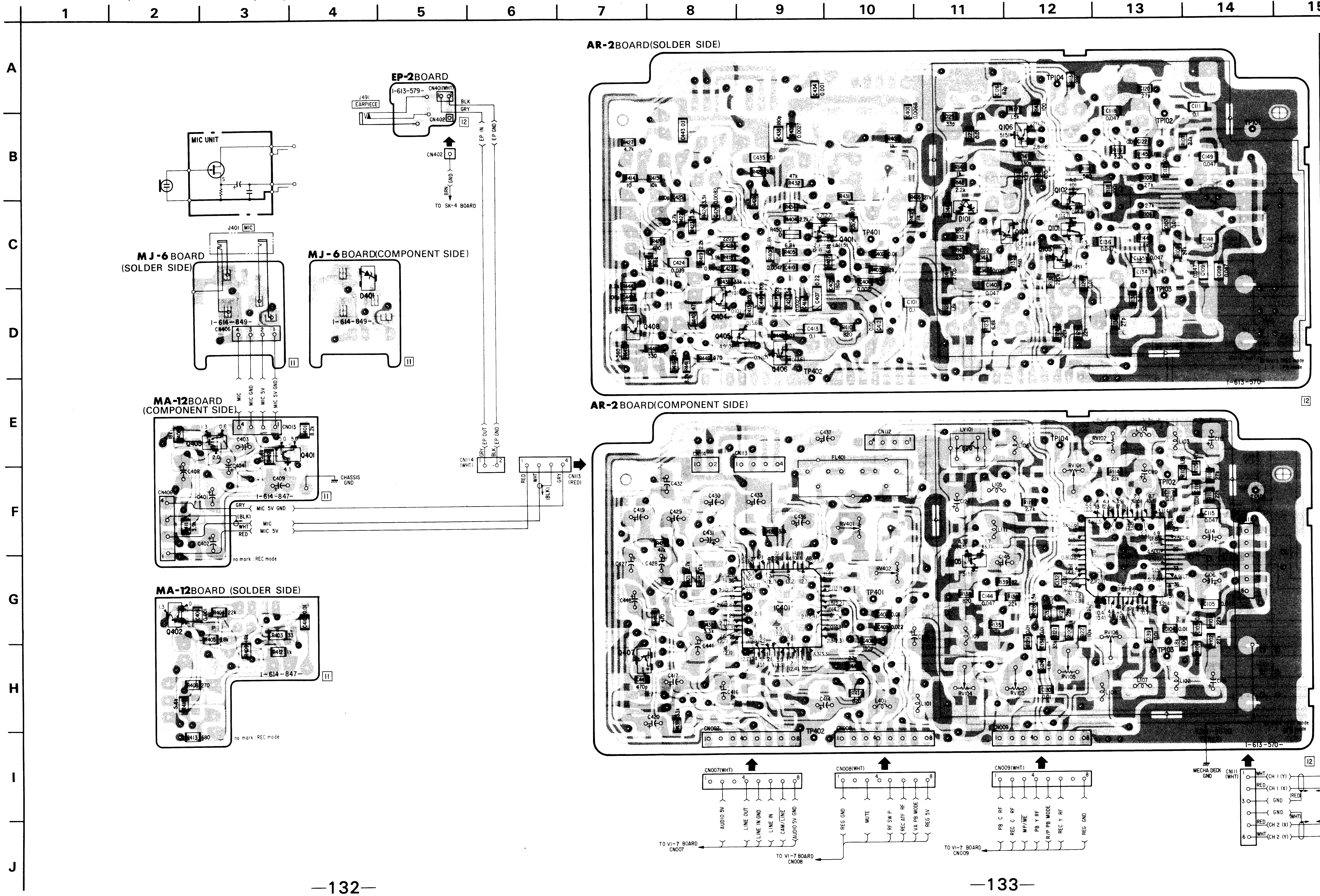
– Ref. No. MA-12, MJ-6 BOARD : 1000 series, AR-2, EP-2 BOARD : 5000 series –


AR-2 BOARD (SOLDER SIDE)
AR-2 BOARD (COMPONENT SIDE)
EP-2 BOARD
MIC UNIT
MJ-6 BOARD (SOLDER SIDE)
MJ-6 BOARD (COMPONENT SIDE)
MA-12 BOARD (COMPONENT SIDE)
MA-12 BOARD (SOLDER SIDE)
TO SK-4 BOARD
TO VI-7 BOARD CN007
TO VI-7 BOARD CN008
TO VI-7 BOARD CN009
MECHA DECK GND
no mark : REC mode
( ) : PB mode
1-613-570-
1-614-847-
1-614-849-
1-613-579-

Q, IC	D	ADJ	TP
			104
			102
			101
106			
102	101		
401			
104,101			
			401
103			
			103
404			
408			
405			
406			
			402
			104
		LV101,RV102	
			102
		RV101	
			101
		RV401	
IC101			
105			
		RV402	
			401
IC401			
		RV106	
			103
407			
		RV105	
		RV104,RV103	
			402

4-7. MA-12 (MIC AMP), MJ-6 (MIC INPUT), AR-2 (AUDIO SIGNAL PROCESS/PB PROCESS), EP-2 (EARPIECE OUTPUT) PRINTED WIRING BOARDS

– Ref. No. MA-12, MJ-6 BOARD : 1000 series, AR-2, EP-2 BOARD : 5000 series –



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A
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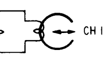
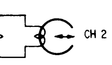
D
E
F
G
H
I
J
EP-2 BOARD
1-613-579-
J491 EARPIECE
CN401(WHT)
CN402
BLK
GRY
EP IN
EP GND
TO SK-4 BOARD
MIC UNIT
J401 MIC
MJ-6 BOARD (SOLDER SIDE)
MJ-6 BOARD (COMPONENT SIDE)
1-614-849-
CN406
D401
MIC
MIC GND
MIC 5V
MIC 5V GND
MA-12 BOARD (COMPONENT SIDE)
1-614-847-
CHASSIS GND
GRY MIC 5V GND
(BLK)
WHT MIC
RED MIC 5V
no mark : REC mode
MA-12 BOARD (SOLDER SIDE)
Q401
Q402
Q403
CN114 (WHT)
EP OUT
EP GND
CN113 (RED)
RED
WHT
(BLK)
GRY
AR-2 BOARD (SOLDER SIDE)
AR-2 BOARD (COMPONENT SIDE)
1-613-570-
TP101
TP102
TP103
TP104
TP401
TP402
IC101
IC401
FL401
LV101
RV101
RV102
RV103
RV104
RV105
RV106
RV401
RV402
CN007(WHT)
AUDIO 5V
LINE OUT
LINE IN GND
LINE IN
CAM/LINE
AUDIO 5V GND
TO VI-7 BOARD CN007
CN008(WHT)
REG GND
MUTE
RF SW P
REC ATF RF
VA PB MODE
REG 5V
TO VI-7 BOARD CN008
CN009(WHT)
PB C RF
REC C RF
MP/ME
PB Y RF
R/P PB MODE
REC Y RF
REG GND
TO VI-7 BOARD CN009
MECHA DECK GND
CN111 (WHT)
CH 1 (Y)
CH 1 (X)
GND
CH 2 (X)
CH 2 (Y)
CH 1
CH 2

Q, IC	D	ADJ	TP
			104
			102
			101
106			
102	101		
401			
104,101			401
103			
			103
404 408 405			
406			
			402
			104
		LV101,RV102	
			102
		RV101	
			101
		RV401	
IC101			
105		RV402	
			401
IC401			
		RV106	
407			103
		RV105	
		RV104,RV103	
			402
Q, IC	D	ADJ	TP

ADJ	TP
	104
	102
	101
	401
	103
	402
	104
LV101,RV102	
	102
RV101	
	101
RV401	
RV402	
	401
RV106	
	103
RV105	
RV104,RV103	
	402
ADJ	TP





Note:

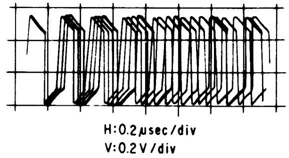
- ⊗ : Through hole.
- ▨ : soldering side
- ▢ : B+ pattern
- ░ : component side

When indicating parts by reference number, please include the board name.

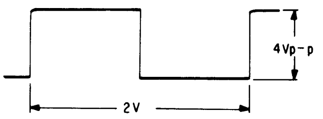
Caution:

Pattern face side: (Solder Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the pattern face are indicated.

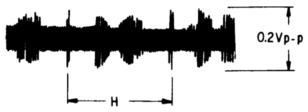
AR-2 BOARD (VIDEO)



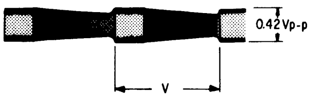
IC101 ① REC



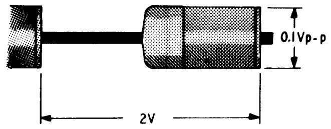
IC101 ② REC/PB



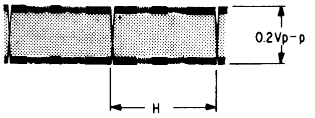
IC101 ③ REC



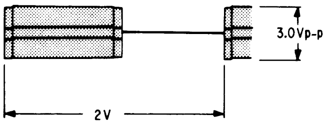
IC101 ⑬ PB



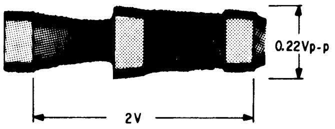
IC101 ⑮, ⑯ PB



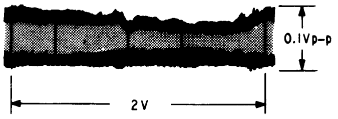
IC101 ㉔, ㊲ REC



IC101 ㉕, ㊱ REC



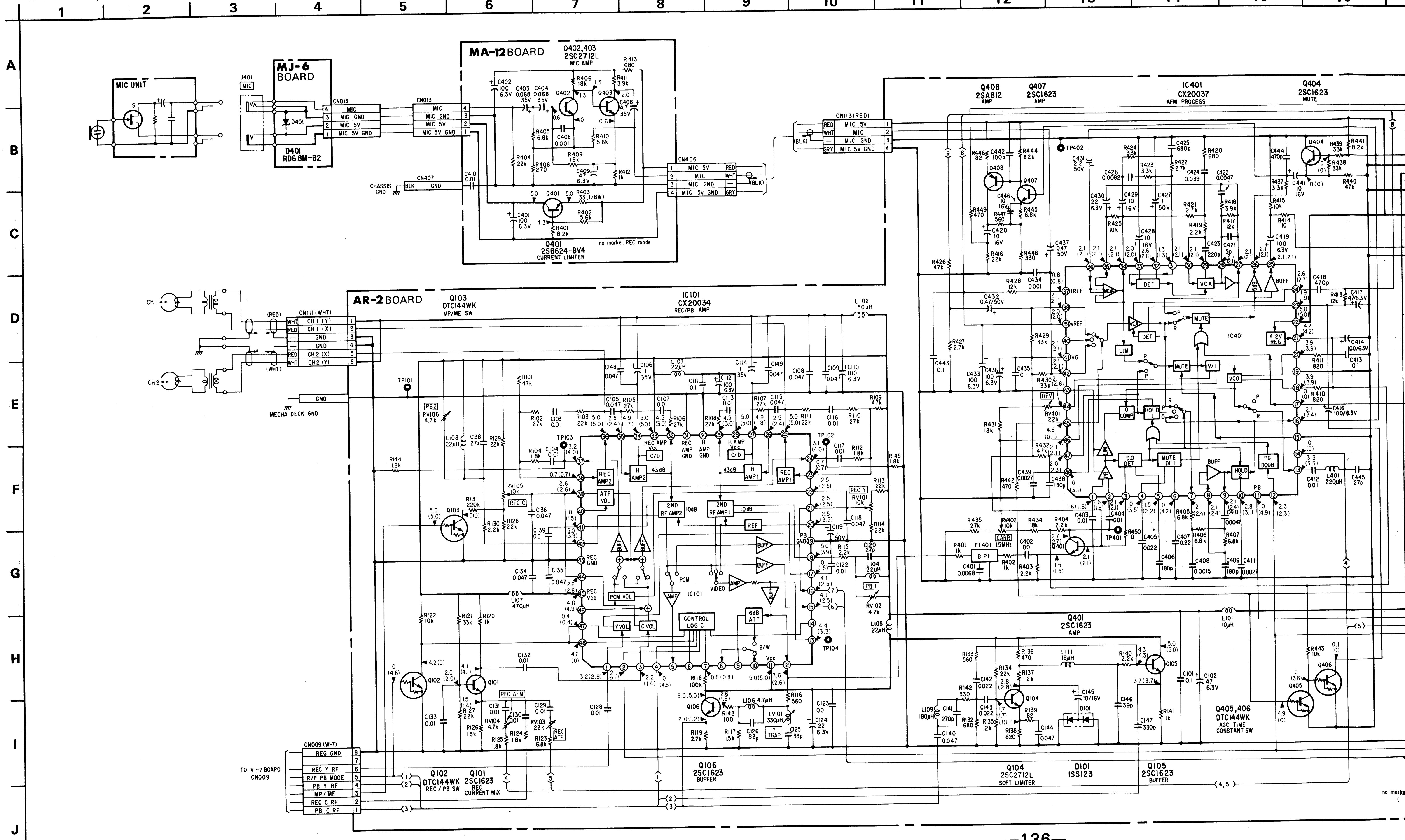
CN009 ① PB

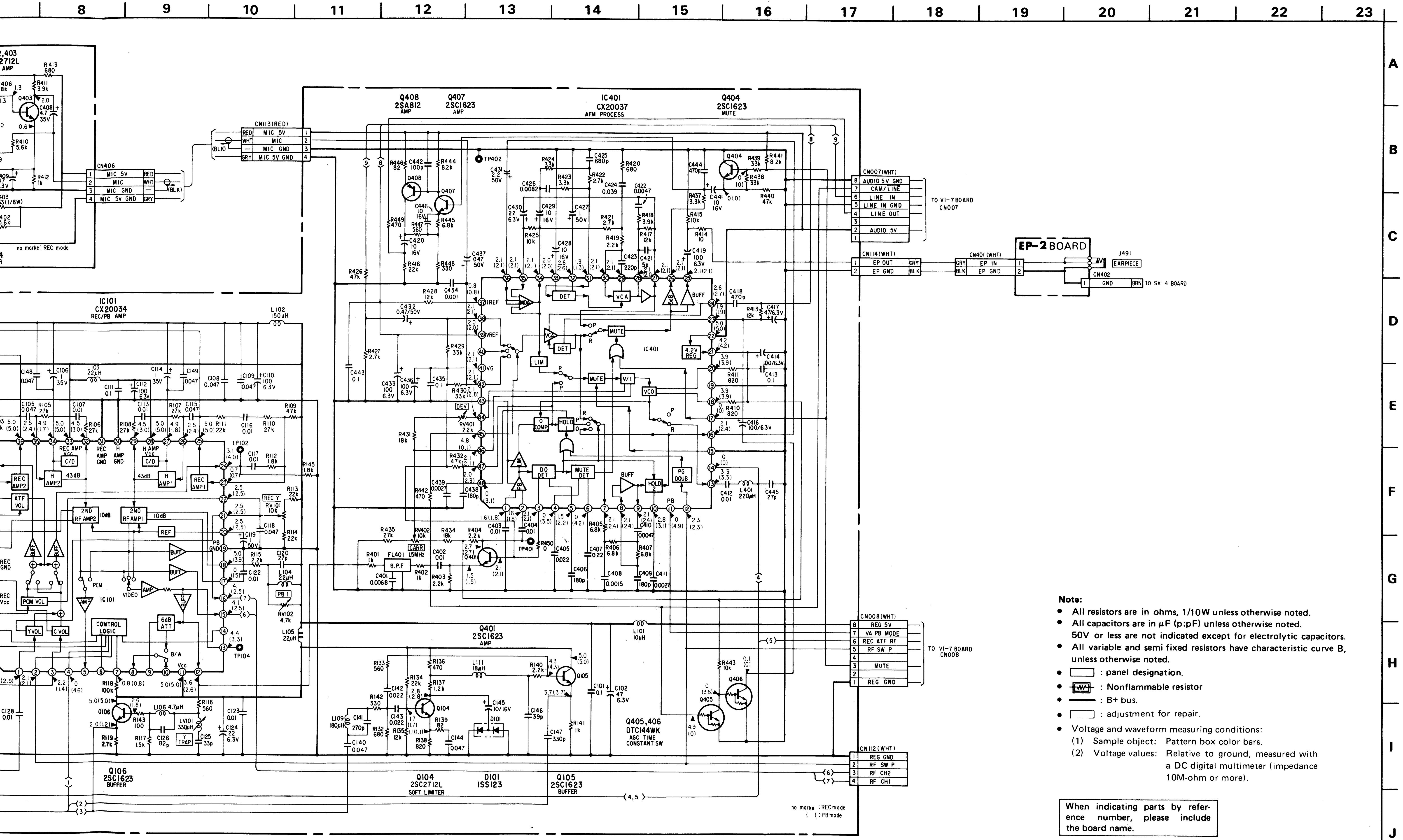


CN009 ④ PB

MA-12 (MIC AMP), MJ-6 (MIC INPUT), AR-2 (AUDIO SIGNAL PROCESS/PB PROCESS), EP-2 (EARPIECE OUTPUT) SCHEMATIC DIAGRAM

– Ref. No. MA-12, MJ-6 BOARD : 1000 series, AR-2, EP-2 BOARD : 5000 series –


MIC UNIT
MJ-6 BOARD
J401 MIC
D401 RD6.8M-B2
MA-12 BOARD
Q402,403 2SC2712L MIC AMP
Q401 2SB624-BV4 CURRENT LIMITER
CN013
CN406
CN407
CHASSIS GND
no marke : REC mode
CN113 (RED)
MIC 5V
MIC
MIC GND
MIC 5V GND
Q408 2SA812 AMP
Q407 2SC1623 AMP
IC401 CX20037 AFM PROCESS
Q404 2SC1623 MUTE
TP402
AR-2 BOARD
Q103 DTC144WK MP/ME SW
IC101 CX20034 REC/PB AMP
CN111 (WHT)
CH1 (Y)
CH1 (X)
GND
CH2 (X)
CH2 (Y)
CH1
CH2
MECHA DECK GND
TP101
TP102
TP103
TP104
REC AMP2
REC AMP1
H AMP2
H AMP1
ATF VOL
2ND RF AMP2
2ND RF AMP1
REF
BUFF
PCM VOL
Y VOL
C VOL
CONTROL LOGIC
6dB ATT
REC Vcc
REC GND
PB GND
B/W
VIDEO
PCM
REC AFM
REC ATF
REC C
REC Y
PB Y
PB 1
PB 2
Y TRAP
CN009 (WHT)
REG GND
REC Y RF
R/P PB MODE
PB Y RF
MP/ME
REC C RF
PB C RF
TO VI-7 BOARD CN009
Q102 DTC144WK REC/PB SW
Q101 2SC1623 REC CURRENT MIX
Q106 2SC1623 BUFFER
Q401 2SC1623 AMP
Q104 2SC2712L SOFT LIMITER
D101 1SS123
Q105 2SC1623 BUFFER
Q405,406 DTC144WK AGC TIME CONSTANT SW
TP401
FL401 B.P.F
CARR 1.5MHz
DEV
IREF
VREF
VG
DET
VCA
LIM
MUTE
V/I
VCO
COMP
HOLD 1
HOLD 2
DO DET
MUTE DET
PG DOUB
4.2V REG
IC401
no marke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G
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I
J
CN113(RED)
MIC 5V
MIC
MIC GND
MIC 5V GND
CN406
Q408
2SA812
AMP
Q407
2SC1623
AMP
IC401
CX20037
AFM PROCESS
Q404
2SC1623
MUTE
TP402
CN007(WHT)
AUDIO 5V GND
CAM/LINE
LINE IN
LINE IN GND
LINE OUT
AUDIO 5V
TO VI-7 BOARD CN007
CN114(WHT)
EP OUT
EP GND
CN401(WHT)
EP IN
EP GND
EP-2 BOARD
J491
EARPIECE
CN402
GND
TO SK-4 BOARD
IC101
CX20034
REC/PB AMP
L102 150uH
REC AMP2
REC AMP1
ATF VOL
2ND RF AMP2
2ND RF AMP1
REF
PCM VOL
Y VOL
C VOL
CONTROL LOGIC
6dB ATT
B/W
TP102
TP104
TP401
FL401 15MHz
B.PF
CARR
DEV
REC Y
PB I
RV101
RV102
RV401
LIM
DET
VCA
MUTE
V/I
VCO
4.2V REG
COMP
HOLD
DO DET
MUTE DET
BUFF
PG DOUB
IREF
VREF
VG
Q401
2SC1623
AMP
Q105
L101 10μH
CN008(WHT)
REG 5V
VA PB MODE
REC ATF RF
RF SW P
MUTE
REG GND
TO VI-7 BOARD CN008
Q405,406
DTC144WK
AGC TIME CONSTANT SW
CN112(WHT)
REG GND
RF SW P
RF CH2
RF CHI
Q106
2SC1623
BUFFER
Q104
2SC2712L
SOFT LIMITER
D101
1SS123
Q105
2SC1623
BUFFER
no marke : REC mode
( ) : PB mode

Note:

- All resistors are in ohms, 1/10W unless otherwise noted.
- All capacitors are in μF (p:pF) unless otherwise noted. 50V or less are not indicated except for electrolytic capacitors.
- All variable and semi fixed resistors have characteristic curve B, unless otherwise noted.
- ☐ : panel designation.
- ▭ : Nonflammable resistor
- ── : B+ bus.
- ☐ : adjustment for repair.
- Voltage and waveform measuring conditions:
  - (1) Sample object: Pattern box color bars.
  - (2) Voltage values: Relative to ground, measured with a DC digital multimeter (impedance 10M-ohm or more).

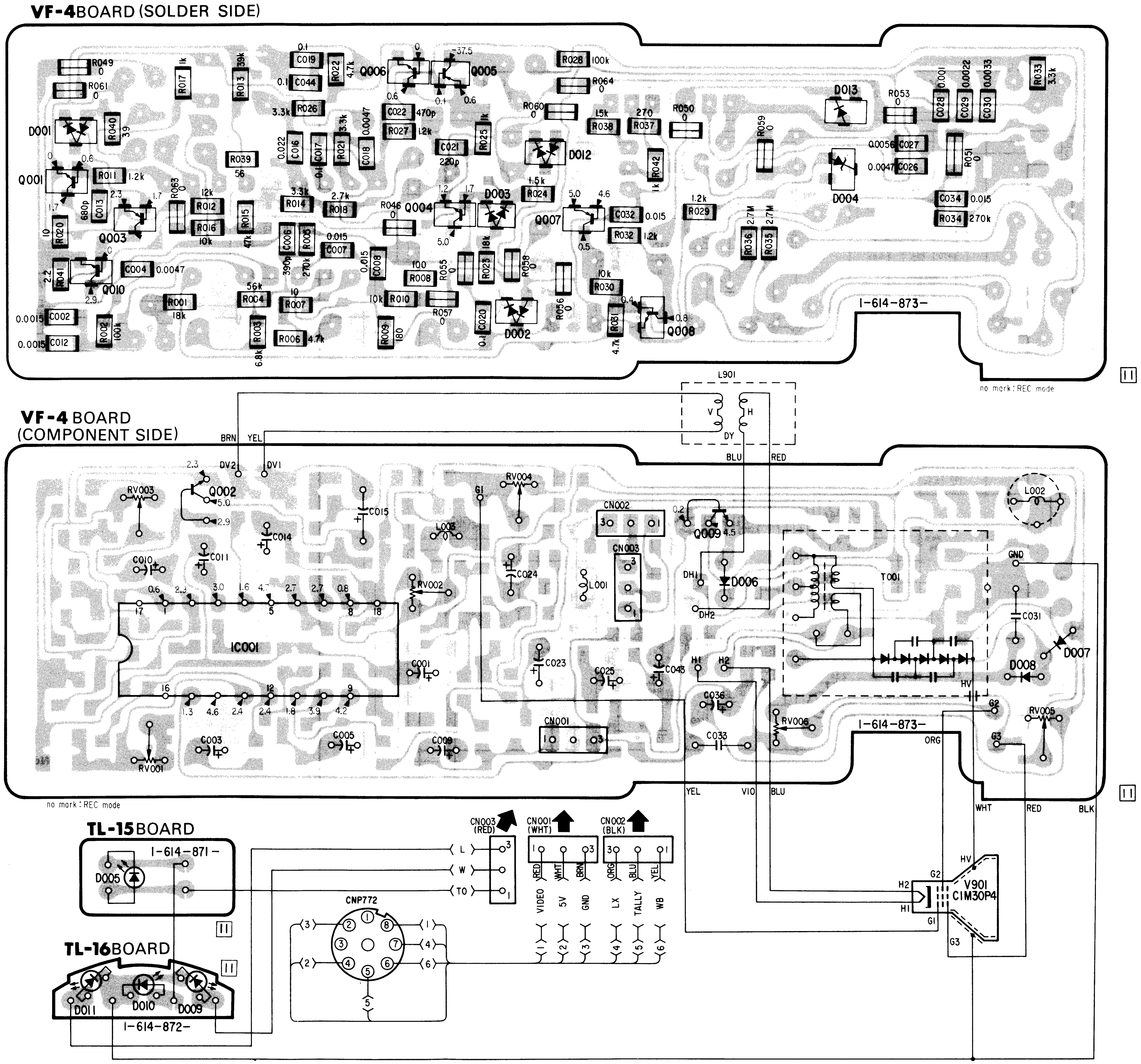
When indicating parts by reference number, please include the board name.

4-8. VF-4 (VIDEO AMP, VIDEO OUT, V OUT, H OUT), TL-15 (LED), TL-16 (LED) PRINTED WIRING BOARDS

– Ref. No. VF-4, TL-15, TL-16 BOARD : 9000 series –

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

	Q,IC	D	ADJ
A	006,005		
B	001	013 001 012 004	
C	003 004 007 010 008	003 002	
D			
E	002 009		RV004 RV003
F	IC001	006 007	RV002
G		008	RV006,RV005 RV001
H		005	
I		011 010 009	
J			
	Q,IC	D	ADJ


VF-4BOARD (SOLDER SIDE)
1-614-873-
no mark: REC mode
L901
V
H
DY
BRN
YEL
BLU
RED
VF-4 BOARD (COMPONENT SIDE)
DV2
DV1
IC001
CN001
CN002
CN003
T001
no mark: REC mode
YEL
VIO
BLU
WHT
RED
BLK
ORG
TL-15BOARD
1-614-871-
D005
TL-16BOARD
D011
D010
D009
1-614-872-
CNP772
CN003 (RED)
CN001 (WHT)
CN002 (BLK)
L
W
TO
VIDEO
5V
GND
LX
TALLY
WB
V901
CIM30P4
H2
H1
G1
G2
G3
HV

Note:

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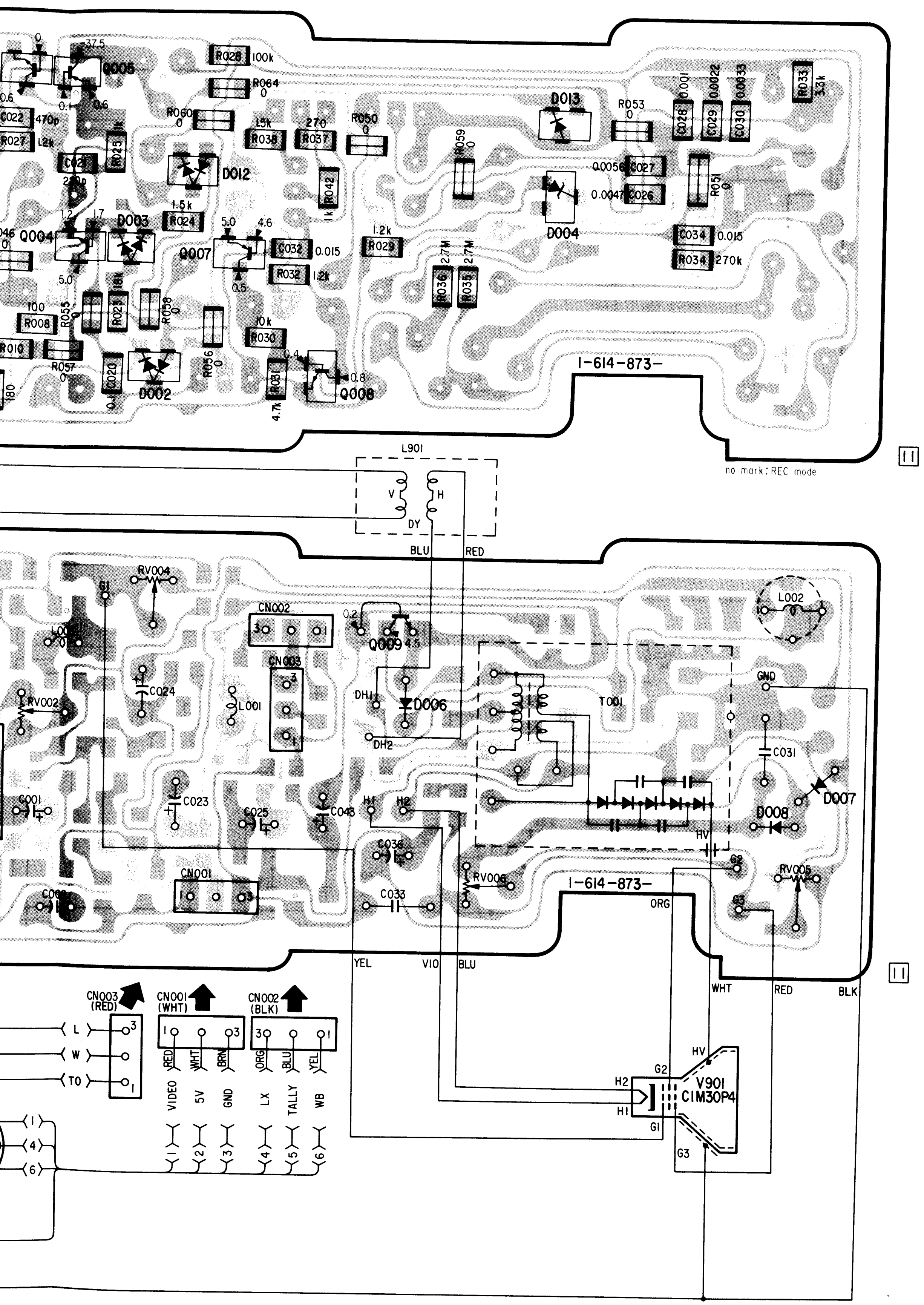
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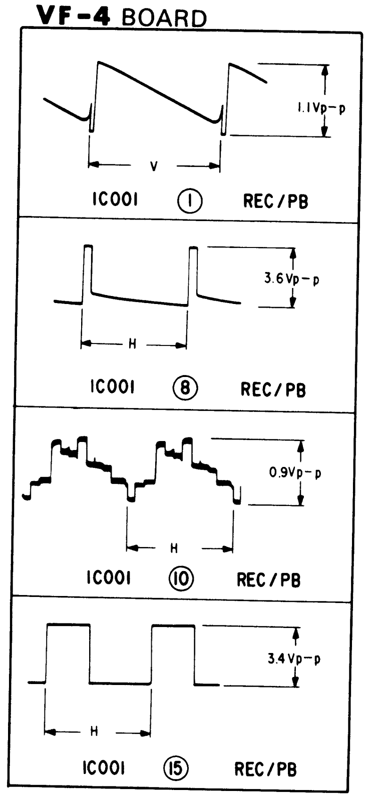
G
H
I
J
R028 100k
R064 0
Q005
R060 0
R038 1.5k
R037 270
R050 0
R059 0
D013
R053 0
C028 0.001
C029 0.0022
C030 0.0033
R033 3.3k
C022 470p
R027 1.2k
R025
D012
R042 1k
C027 0.0056
C026 0.0047
R051 0
D004
C034 0.015
R034 270k
Q004
D003
R024 1.5k
Q007
C032 0.015
R032 1.2k
R029 1.2k
R036 2.7M
R035 2.7M
R008 100
R055
R023 18k
R058 0
R010
R057 0
C020
D002
R056 0
R030 10k
R031 4.7k
Q008
1-614-873-
no mark: REC mode
L901
V
H
DY
BLU
RED
G1
RV004
CN002
Q009
L002
CN003
RV002
C024
L001
DH1
D006
DH2
T001
GND
C031
D007
C001
C023
C025
C043
H1
H2
D008
HV
C036
G2
RV005
CN001
RV006
C033
1-614-873-
ORG
G3
YEL
VIO
BLU
WHT
RED
BLK
CN003 (RED)
CN001 (WHT)
CN002 (BLK)
L
W
TO
RED
WHT
BRN
ORG
BLU
YEL
VIDEO
5V
GND
LX
TALLY
WB
V901 C1M30P4
HV
G2
H2
H1
G1
G3

VF-4 BOARD



Note:

- ▩ : soldering side
- ▨ : B+ pattern

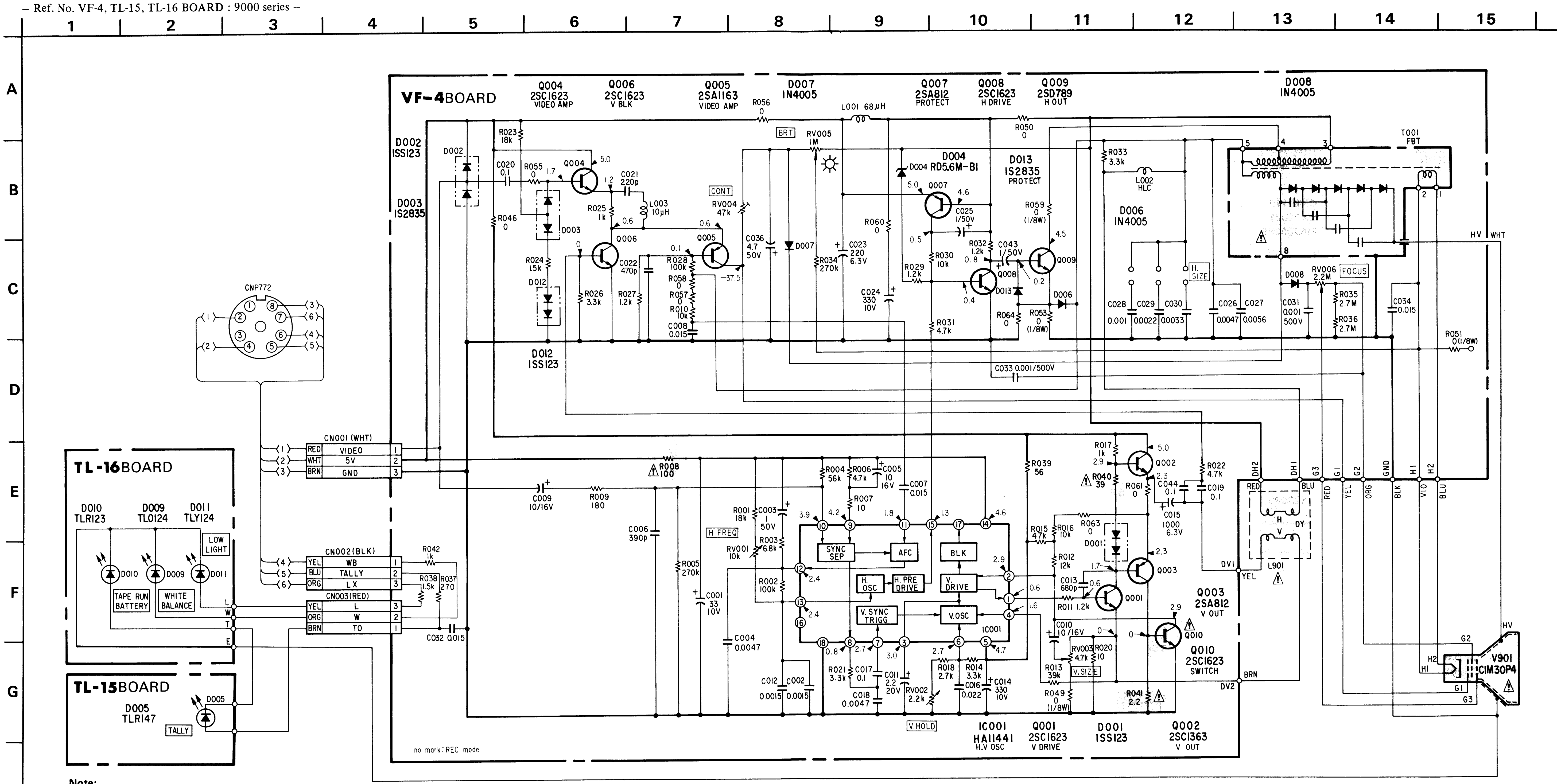
When indicating parts by reference number, please include the board name.

Caution:

Pattern face side: (Solder Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the pattern face are indicated.

VF-4 (VIDEO AMP, VIDEO OUT, V OUT, H OUT), TL-15 (LED), TL-16 (LED) SCHEMATIC DIAGRAM

– Ref. No. VF-4, TL-15, TL-16 BOARD : 9000 series –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2
3
4
5
6
7
8
9
10
11
12
13
14
15
A
B
C
D
E
F
G
H
I
J
VF-4BOARD
TL-16BOARD
TL-15BOARD
Q004 2SC1623 VIDEO AMP
Q006 2SC1623 V BLK
Q005 2SA1163 VIDEO AMP
D007 1N4005
Q007 2SA812 PROTECT
Q008 2SC1623 H DRIVE
Q009 2SD789 H OUT
D008 1N4005
T001 FBT
D002 1SS123
D003 1S2835
D004 RD5.6M-B1
D013 1S2835 PROTECT
D006 1N4005
D012 1SS123
L001 68μH
L002 HLC
L003 10μH
BRT
CONT
H. SIZE
FOCUS
H. FREQ
V. SIZE
V. HOLD
RV005 1M
RV004 47k
RV006 2.2M
RV001 10k
RV002 2.2k
RV003 4.7k
CNP772
CN001 (WHT)
RED VIDEO
WHT 5V
BRN GND
CN002 (BLK)
YEL WB
BLU TALLY
ORG LX
CN003 (RED)
YEL L
ORG W
BRN TO
D010 TLR123
D009 TLO124
D011 TLY124
LOW LIGHT
TAPE RUN BATTERY
WHITE BALANCE
D005 TLR147
TALLY
SYNC SEP
AFC
BLK
H. OSC
H. PRE DRIVE
V. DRIVE
V. SYNC TRIGG
V. OSC
IC001
IC001 HA11441 H.V OSC
Q001 2SC1623 V DRIVE
D001 1SS123
Q002 2SC1363 V OUT
Q003 2SA812 V OUT
Q010 2SC1623 SWITCH
V901 CIM30P4
DY
L901
HV WHT
DH2
DH1
G3
G1
G2
GND
H1
H2
V10
no mark: REC mode

Note:

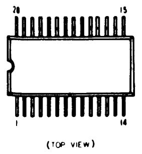
- All resistors are in ohms, 1/10W unless otherwise noted.
- All capacitors are in μF (p:pF) unless otherwise noted. 50V or less are not indicated except for electrolytic capacitors.
- All variable and semi fixed resistors have characteristic curve B, unless otherwise noted.
- ▭ : panel designation.
- ▭ : Nonflammable resistor
- ——— : B+ bus.
- ▭ : adjustment for repair.
- Voltage and waveform measuring conditions:
  - (1) Sample object: Pattern box color bars.
  - (2) Voltage values: Relative to ground, measured with a DC digital multimeter (impedance 10M-ohm or more).

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

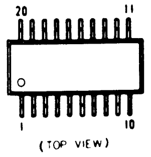
When indicating parts by reference number, please include the board name.

4-9. SEMICONDUCTORS

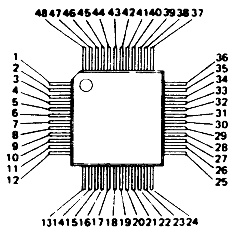
CX7930
CX7930-1


28
15
1
14
(TOP VIEW)

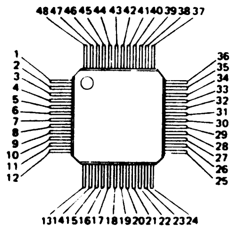
CX7991


20
11
1
10
(TOP VIEW)

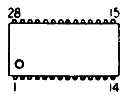
CX20030
CX20031
CX20032
CX20053
CX20055
CX20056
CX23047A
CX23054
MB88505-245M


48 47 46 45 44 43 42 41 40 39 38 37
1 2 3 4 5 6 7 8 9 10 11 12
36 35 34 33 32 31 30 29 28 27 26 25
13 14 15 16 17 18 19 20 21 22 23 24

CX20034
CX20037
CX20037-2
CX20151

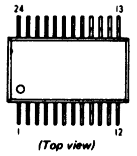

48 47 46 45 44 43 42 41 40 39 38 37
1 2 3 4 5 6 7 8 9 10 11 12
36 35 34 33 32 31 30 29 28 27 26 25
13 14 15 16 17 18 19 20 21 22 23 24

CX20035
CX20036
CX22022

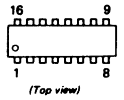


(Top view)

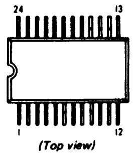
CX20114


24
13
1
12
(Top view)

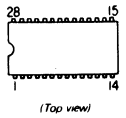
CX20115
CX22021
MB7052PF


16
9
1
8
(Top view)

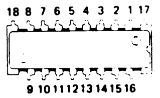
CX20117


24
13
1
12
(Top view)

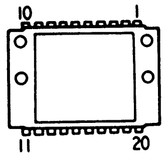
CX23039


28
15
1
14
(Top view)

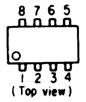
HA11441


18 8 7 6 5 4 3 2 1 17
9 10 11 12 13 14 15 16

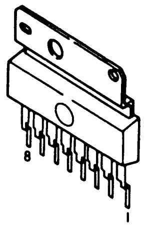
ICX-021K



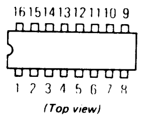
MB3763PF
SN75361AP


8 7 6 5
1 2 3 4
(Top view)

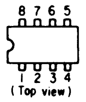
MB3763PS



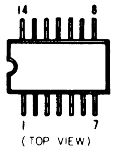
MB88201-170N
TC4526BF


16 15 14 13 12 11 10 9
1 2 3 4 5 6 7 8
(Top view)

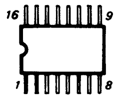
MMH0026CP1


8 7 6 5
1 2 3 4
(Top view)

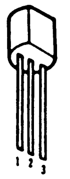
TC4013BF
TC4066BF
TC4069UBF


14
8
1
7
(TOP VIEW)

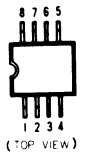
TC4028BF
TC4052BF



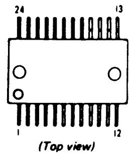
TL431CLP
TL431CLPB



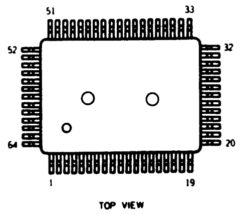
µPC358G2
µPC393G2


8 7 6 5
1 2 3 4
(TOP VIEW)

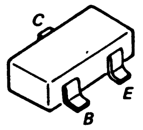
µPD6107G


24
13
1
12
(Top view)

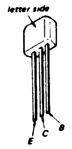
µPD7503G-245


51
33
52
32
64
20
1
19
TOP VIEW

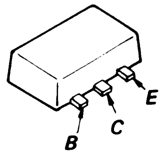
2SA812
2SA1122
2SA1162
2SA1163
2SA1179
2SA1226
2SB624-BV4
2SC1621
2SC1623
2SC2223
2SC2223-F14
2SC2412
2SC2712
2SC2812
2SC3052
2SD596
2SD1048
DTA114EK
DTA114ES
DTA124EK
DTA144EK
DTA144WK
DTC114EK
DTC143TK
DTC144EK
DTC144WK



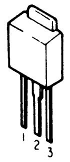
2SA1175


letter side
E C B

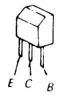
2SA1242LB
2SD999
2SD1005



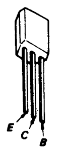
2SA1385



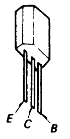
2SB733
2SB733-4
2SB734



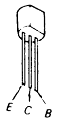
2SC633-SP8



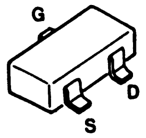
2SC634



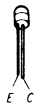
2SC1363
2SC1364
2SC1475
2SC1475-13
2SD789



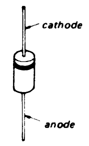
2SK94
2SK160-K5
2SK160-K6
2SK209



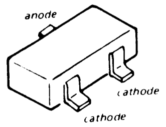
NJL7141E



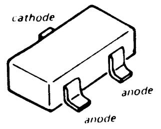
1N4005


cathode
anode

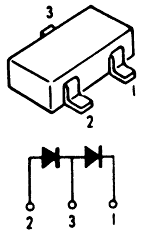
1S2835
DAP202K
MA151WA


anode
cathode
cathode

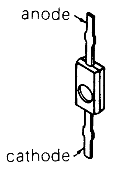
1S2837
DAN202K
MA151WK


cathode
anode
anode

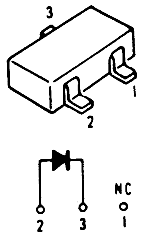
1SS123
DA204K
MA153



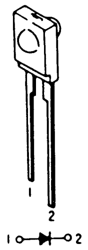
1T32-2


anode
cathode

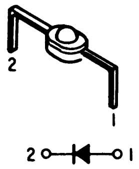
E10DS2
E10QS03
RD3.9M-B1
RD3.9M-B2
RD5.1M-B1
RD5.1M-B2
RD5.6M-B1
RD5.6M-B2
RD6.8M-B1
RD6.8M-B2
RD9.1M-B1
RD12M-B1
RD12M-B2
RD12M-B3



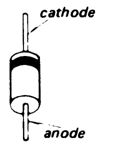
GL-450



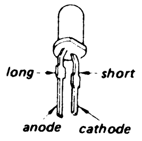
GL-1EG102
GL-1HY102
GL-1PR102



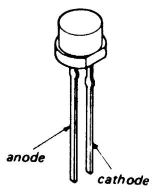
HZ4ALL
HZ5BLL
HZ5CLL


cathode
anode

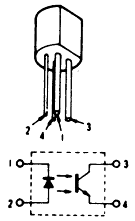
TLO124
TLR124
TLY124


long
short
anode
cathode

TLR147


anode
cathode

NJL5141E



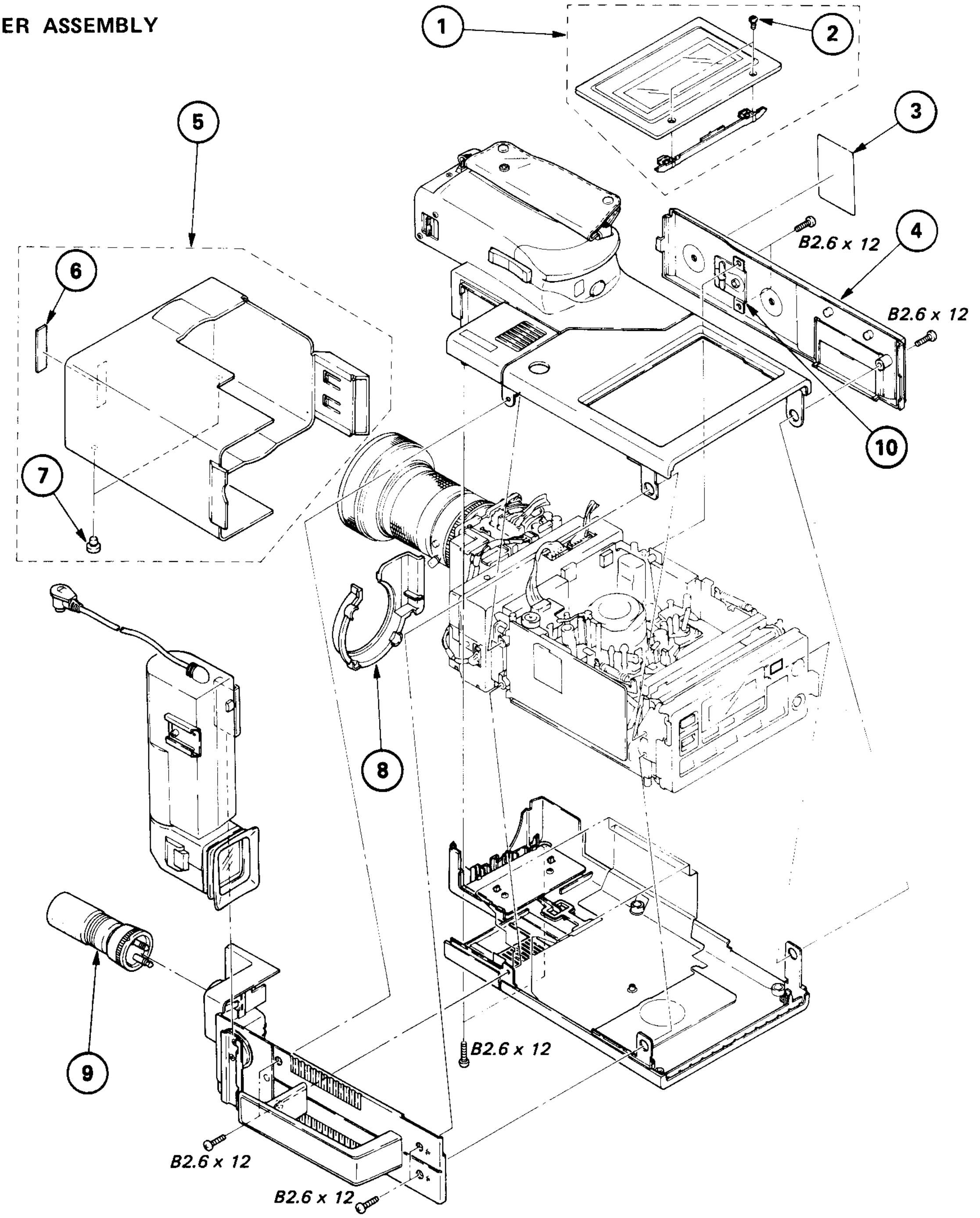
SECTION 5
EXPLODED VIEWS

NOTE:

- Itmes with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

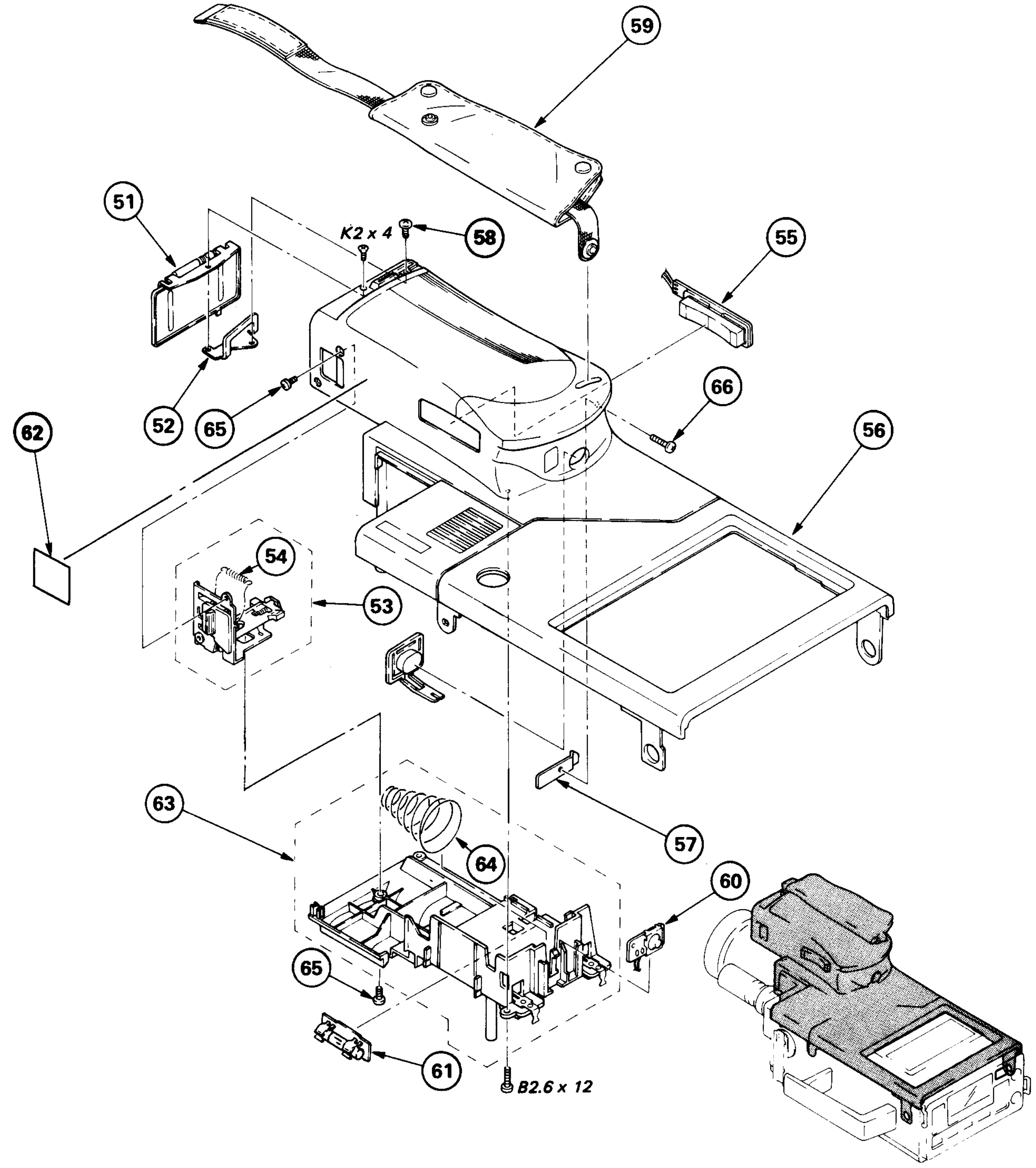
The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

5-1. COVER ASSEMBLY



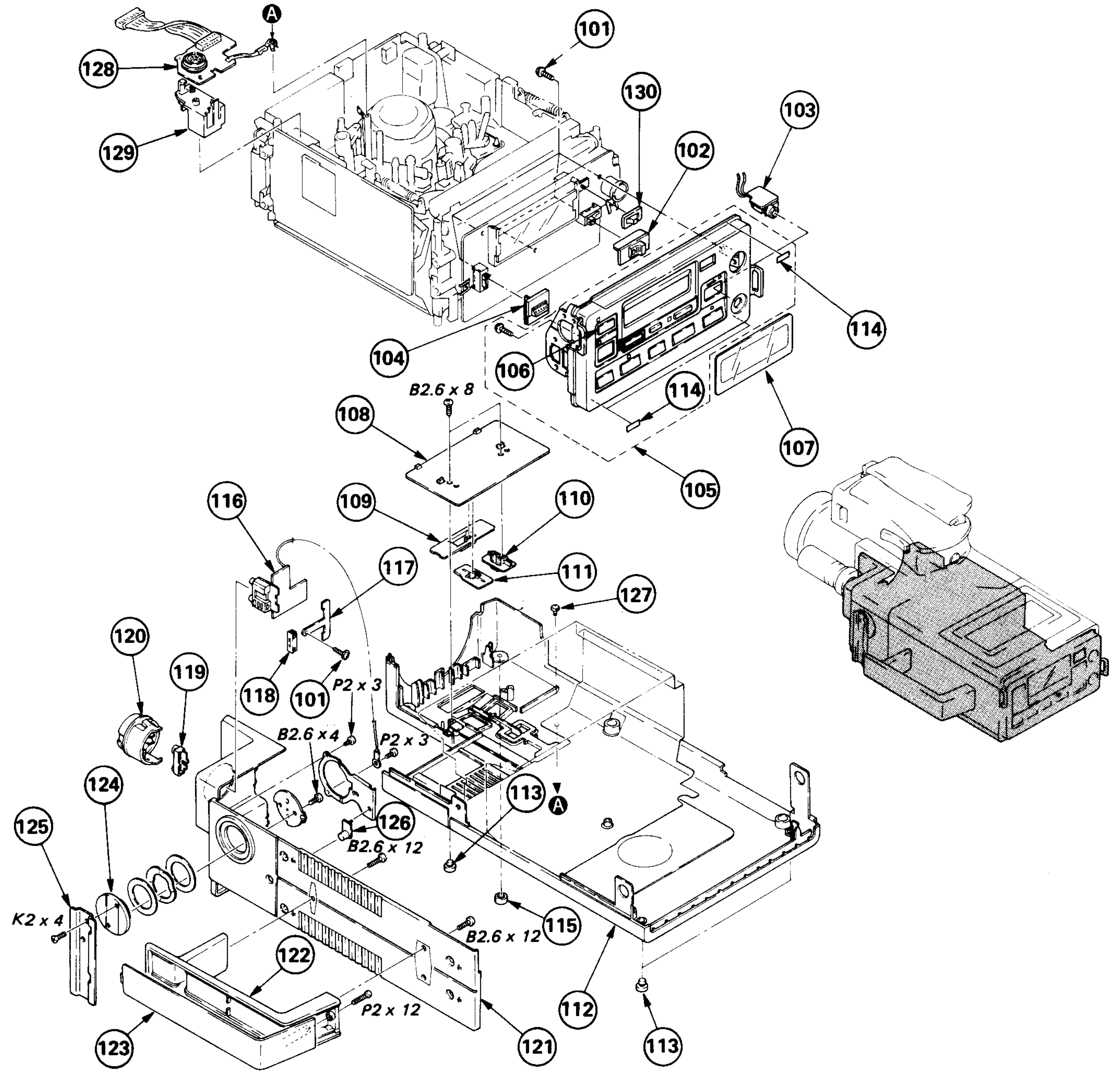
No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
1	X-3686-596-1	LID ASSY, CASSETTE	2	6	*3-703-352-00	EMBLEM, SONY	
2	3-686-804-01	SCREW (2X5), TAPPING		7	3-688-931-01	FOOT, RUBBER	
3	*3-688-961-01	LABEL, MODEL NUMBER		8	3-688-987-01	COVER (C), LENS	
4	X-3686-616-1	CABINET (LOWER) ASSY	10	9	8-814-208-00	MICROPHONE, BUILT-IN (C-2005)	
5	X-3686-615-1	COVER ASSY, HEAD, CAMERA	6, 7	10	3-688-936-01	SCREW, TRIPOD	

5-2. CABINET (LEFT) ASSEMBLY



No.	Part No.	Description	Remark
51	X-3686-613-1	LID ASSY, BATTERY	51,52,57,59,67
52	3-688-926-01	BRACKET (FRONT), GRIP	
53	X-3686-560-1	LOCK ASSY, BATTERY	54
54	3-570-898-00	SPRING, TENSION	
55	1-554-944-11	SWITCH, PUSH (ZOOM) S904	
56	X-3686-618-1	CABINET (LEFT) SUB ASSY	
57	3-688-990-01	BRACKET (REAR), GRIP	
58	3-688-901-01	SCREW (3X7) (C LOCK), (+) B	
59	3-688-982-01	BELT, GRIP	
60	1-554-943-11	SWITCH, PUSH (START/STOP) S903	
61	*1-613-581-11	FU-34 BOARD	
62	*3-686-951-02	LABEL, BATTERY PICK	
63	X-3686-614-1	TERMINAL BOARD ASSY, BATTERY	64
64	3-686-775-01	SPRING	
65	3-686-999-11	SCREW (2.6X6) (C LOCK), (+) B	
66	3-686-999-21	SCREW (2.6X10) (C LOCK), (+) B	

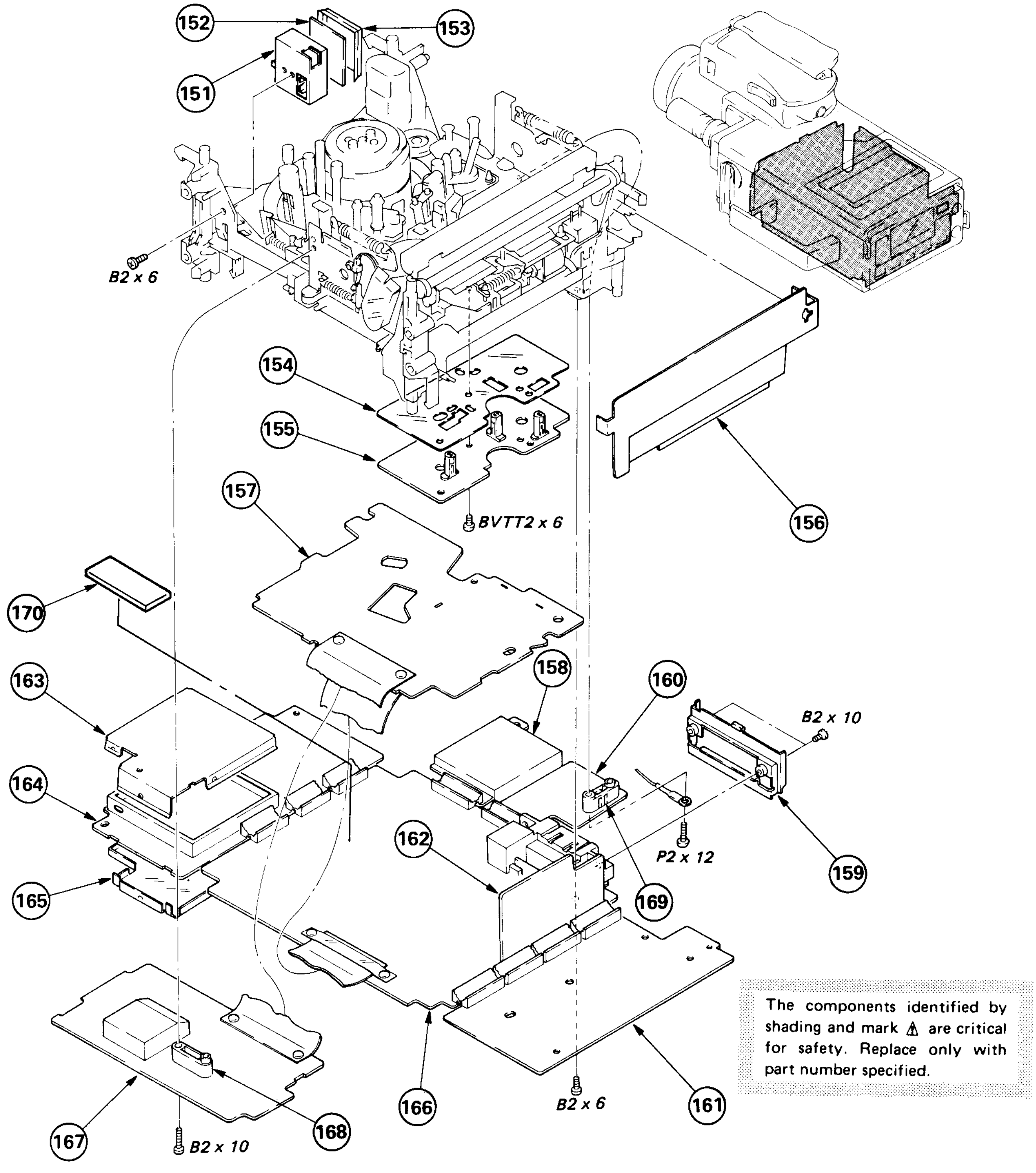
5-3. CONTROL PANEL, CABINET (UPPER, RIGHT) ASSEMBLY



A
128
101
130
103
129
102
114
104
106
114
B2.6 x 8
108
107
105
116
109
110
117
111
127
120
119
118
101
P2 x 3
B2.6 x 4
P2 x 3
124
113
A
125
126
B2.6 x 12
K2 x 4
115
B2.6 x 12
122
112
P2 x 12
123
121
113

No.	Part No.	Description	Remark
101	3-669-480-11	+ PTPWH 2	
102	3-686-785-01	BUTTON, REC	
103	*1-613-579-11	EP-2 BOARD	
104	3-686-798-01	KNOB, EJECT	
105	X-3686-589-1	PANEL ASSY, CONTROL	106, 114
106	3-686-833-01	BUTTON, POWER	
107	3-686-786-01	WINDOW, LCD	
108	*A-7060-109-A	RR-9 BOARD, COMPLETE	
109	3-688-991-01	KNOB, WB	
110	3-688-933-01	KNOB, IRIS	
111	3-688-932-01	KNOB, POWER. C	
112	X-3686-617-1	CABINET (R) SUB ASSY	113
113	3-688-931-01	FOOT, RUBBER	
114	*3-880-474-00	CUSHION, 15X5X0.3	
115	3-688-989-01	FOOT	
116	*A-7060-110-A	MA-12 BOARD, COMPLETE	
117	*3-688-980-01	BRACKET, MA	
118	*3-688-979-01	CUSHION (X), MICROPHONE	
119	*3-686-776-01	CUSHION (A), MICROPHONE	
120	3-688-996-01	HOLDER, MICROPHONE	
121	X-3686-608-1	CABINET (UPPER) SUB ASSY	122-126
122	3-688-934-01	HANDLE (1)	
123	3-688-935-01	HANDLE (2)	
124	*3-693-209-01	TABLE, ROTARY	
125	*3-693-201-01	BRACKET, VF	
126	3-693-202-01	BUTTON, LOCK RELEASE	
127	3-703-502-31	SCREW	
128	*1-613-580-11	EF-3 BOARD	
129	*3-688-953-01	HOLDER, EF	
130	3-686-979-01	KNOB, S/L	

5-4. MAIN BOARD ASSEMBLY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B2 x 10
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P2 x 12
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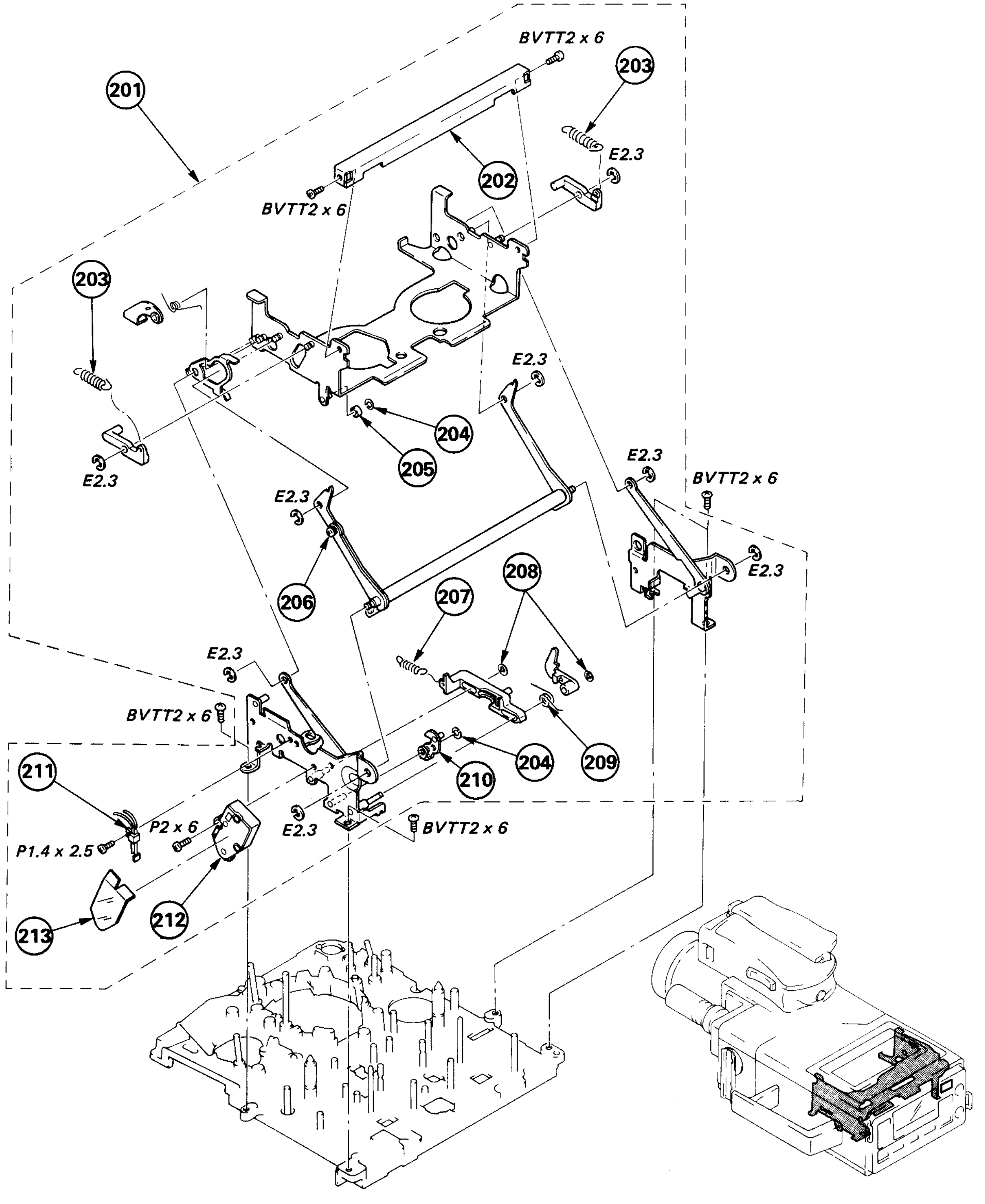
169
B2 x 6
166
161
167
B2 x 10
168

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remark
151	*3-686-955-01	CASE (MAIN), SHIELD, FE	
152	*A-7060-105-A	FE-4 BOARD, COMPLETE	
153	*3-686-953-02	LID, SHIELD CASE, FE	
154	*3-686-948-01	INSULATOR, RS	
155	*A-7060-104-A	RS-5 BOARD, COMPLETE	
156	*3-686-947-02	BLIND, CASSETTE COMPARTMENT	
157	*A-7060-054-A	MC-8 BOARD, COMPLETE	
158	⚠1-464-376-21	CONVERTER, DC-DC DR901	
159	*3-688-908-01	COVER, M	
160	*A-7060-107-A	HS-5 BOARD, COMPLETE	169
161	*A-7060-048-A	SK-4 BOARD, COMPLETE	
162	*A-7060-106-A	DS-8 BOARD, COMPLETE	
163	*3-686-954-01	LID, UPPER, SHIELD CASE, AR	
164	*A-7060-047-A	AR-2 BOARD, COMPLETE	
165	*X-3686-585-1	LID ASSY, BOTTOM, SHIELD CASE	
166	*A-7060-046-A	VI-7 BOARD, COMPLETE	
167	*A-7060-053-A	SV-14 BOARD, COMPLETE	168
168	*X-3686-592-1	HOLDER ASSY, SV END	
169	*X-3686-591-1	HOLDER ASSY, HS TOP	
170	*A-7070-074-A	EX-1 BOARD, COMPLETE	

5-5. CASSETTE COMPARTMENT ASSEMBLY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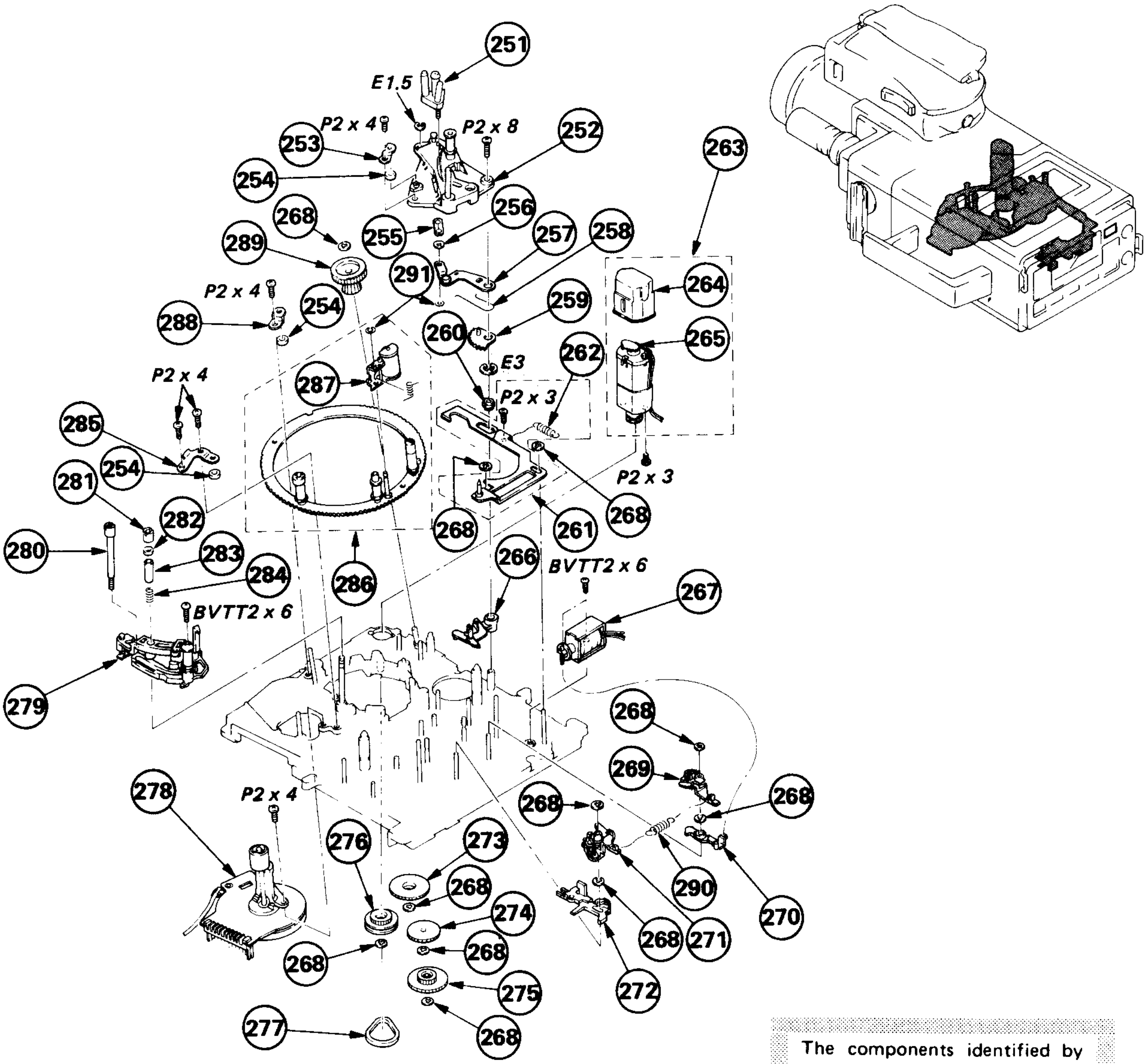
E2.3
BVTT2 x 6
E2.3
206
207
208
E2.3
BVTT2 x 6
204
209
210
211
P2 x 6
P1.4 x 2.5
E2.3
BVTT2 x 6
213
212

No.	Part No.	Description	Remark
201	A-7040-005-A	CASSETTE COMPARTMENT ASSY	202-213
202	3-686-718-01	REINFORCEMENT	
203	3-686-883-01	SPRING, TENSION	
204	3-578-265-11	WASHER, STOPPER	
205	*3-686-693-01	ROLLER, LOCK	
206	3-672-561-00	+PSW 2X4	
207	3-143-053-00	SPRING, TENSION	
208	3-669-465-00	WASHER (1.5), STOPPER	
209	3-686-694-01	SPRING, TORSION	
210	*X-3686-541-1	CLAW ASSY, LOCK	
211	1-553-226-00	SWITCH, LEAF (CASSETTE LOCK) S901	
212	*3-681-528-00	DAMPER	
213	*3-686-937-01	INSULATOR, DAMPER	

5-6. CHASSIS ASSEMBLY 1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E3
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BVTT2 x 6
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286
BVTT2 x 6
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P2 x 4
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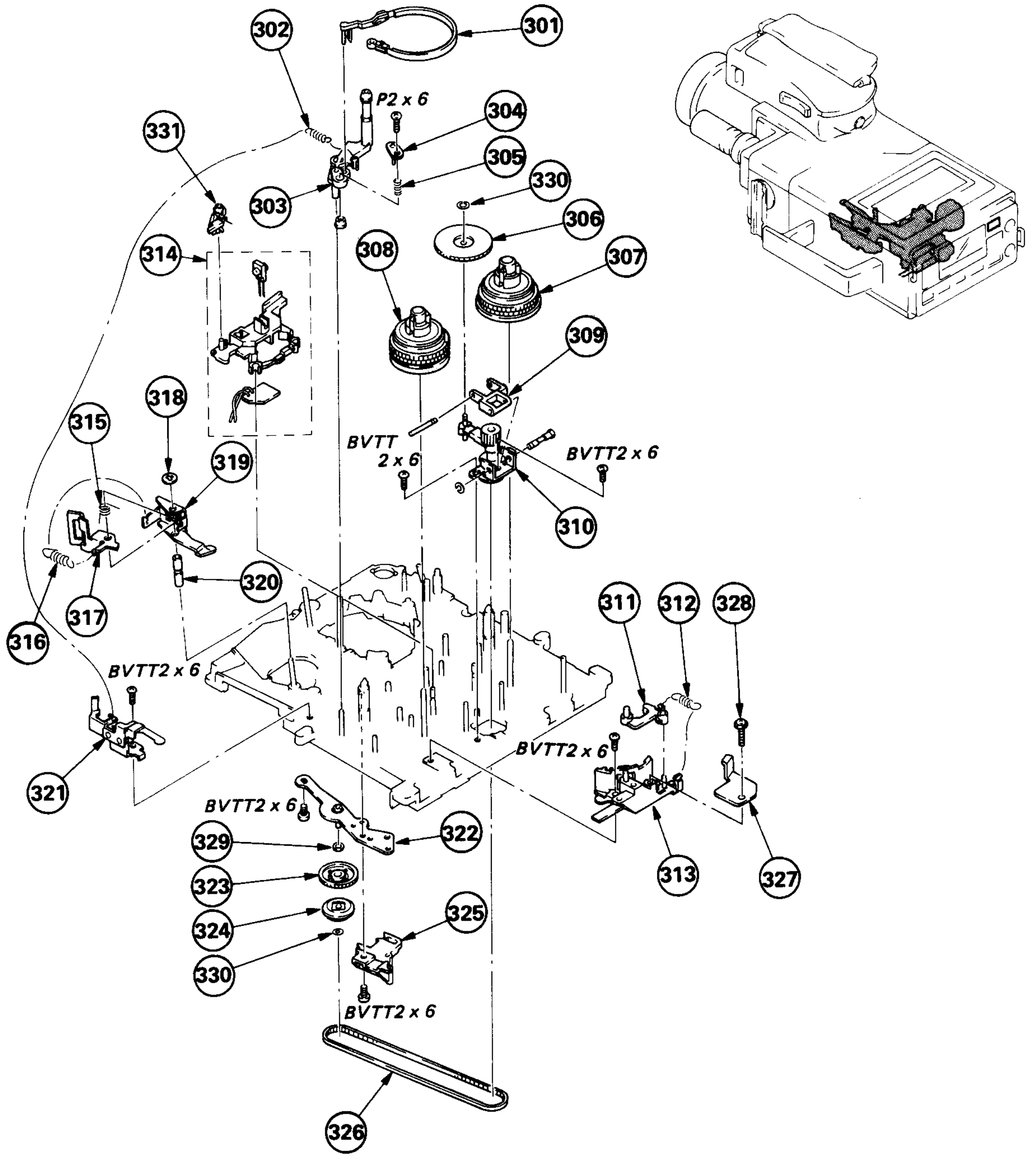
The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remark
251	X-3686-502-1	BASE ASSY, GUIDE	
252	X-3686-577-1	CHASSIS ASSY, GUIDE, SLANT	
253	*3-686-503-01	RETAINER, ROLLER	
254	3-686-665-01	ROLLER, RING	
255	3-686-663-01	WASHER, STOPPER, 2 GANG	
256	3-701-436-21	WASHER, POLYEHTHYLENE	
257	X-3686-537-1	ARM ASSY	
258	3-686-701-01	SPRING	
259	X-3686-535-1	GEAR ASSY, SECTOR	
260	3-686-537-01	RETAINER, LOCK SLODER	
261	*A-7040-014-A	SLIDER ASSY, LOCK	262
262	3-686-887-01	SPRING, TENSION	
263	⚠A-7040-031-A	MOTOR ASSY, L (LOADING) M901	264, 265
264	*3-686-757-01	CAP, SHIELD, L MOTOR	
265	1-161-073-11	CAP, CERAMIC 0.033MF C902	
266	*3-686-636-01	ARM, T.S RELEASE	
267	⚠1-454-377-11	SOLENOID, PLUNGER PM901	
268	3-669-465-00	WASHER (1.5), STOPPER	
269	X-3686-574-1	BRAKE ASSY, MAIN, TAKE-UP	
270	*3-686-635-01	ARM, P	

No.	Part No.	Description	Remark
271	X-3686-573-1	BRAKE ASSY, MAIN, SUPPLY	
272	*3-686-629-01	SLIDER, SELECTION, UPPER & LOWER	
273	3-686-508-01	GEAR, NO.2	
274	3-686-545-01	GEAR, NO.3	
275	3-686-544-01	GEAR, NO.4	
276	X-3686-514-1	GEAR ASSY, NO.1	
277	3-686-546-01	BELT, L- MOTOR	
278	8-838-077-01	MOTOR, DC (BHF-2800B)(CAPSTAN MOTOR)M902	
279	A-7040-024-A	GUIDE (P) ASSY, ENTRANCE	
280	3-686-561-01	SCREW, DRUM GUARD	
281	3-686-724-01	NUT, GUIDE	
282	*3-686-894-01	FLANGE, #3 #4 GUIDE	
283	3-686-912-01	GUIDE, #3 #4	
284	3-669-666-00	SPRING, COMPRESSION	
285	*3-686-675-01	STOPPER, RING	
286	A-7040-007-A	RING ASSY, LOADING	287, 291
287	X-3686-576-1	ARM ASSY, PINCH ROLLER	
288	*3-686-911-01	PLATE, TOP, ROLLER	
289	X-3686-505-1	GEAR ASSY, NO.10	
290	3-686-882-01	SPRING, TENSION	
291	3-686-559-01	WASHER	

5-7. CHASSIS ASSEMBLY 2



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BVTT2 x 6
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BVTT2 x 6
BVTT2 x 6
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BVTT2 x 6
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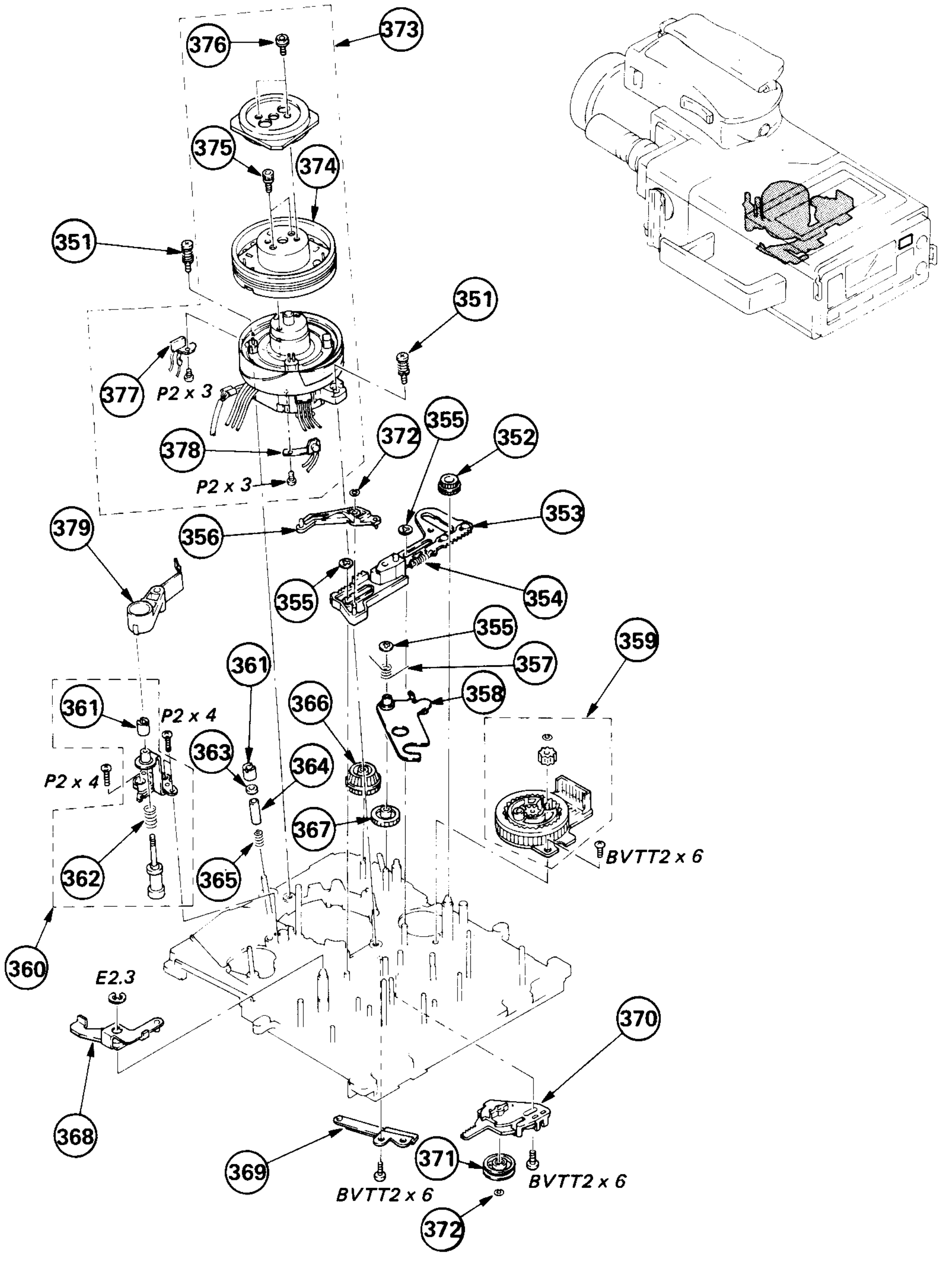
BVTT2 x 6
326

No.	Part No.	Description	Remark
301	X-3686-531-1	BAND ASSY, TENSION REGULATOR	
302	3-686-918-01	SPRING, TENSION	
303	X-3686-532-1	ARM SUB ASSY, TENSION REGULATOR	
304	*X-3686-523-1	PLATE ASSY, TENSION REGULATOR	
305	3-669-666-00	SPRING, COMPRESSION	
306	X-3686-526-1	GEAR (B) ASSY, DRIVING	
307	X-3686-572-2	TABLE ASST, REEL, TAKE-UP	
308	X-3686-571-2	TABLE ASST, REEL, SUPPLY	
309	*3-686-630-01	ARM(B), SELECTION, UPPER & LOWER	
310	X-3686-581-1	ARM COMPLETE ASSY, DRIVING	
311	*3-686-637-01	BRAKE, S SOFT	
312	3-686-908-01	SPRING, TENSION	
313	*3-686-760-01	BAND, GUIDE	
314	*A-7070-024-A	LD-1 BOARD, COMPLETE	
315	3-686-568-01	SPRING, TORSION	
316	3-686-885-01	SPRING, TENSION	

No.	Part No.	Description	Remark
317	*3-686-641-01	ARM, PINCH PRESS	
318	3-669-465-00	WASHER (1.5), STOPPER	
319	*3-686-660-01	ARM, PINCH LIMITER	
320	*3-686-567-01	SLEEVE, PINCH PRESS	
321	*X-3686-525-1	HOOK ASSY, SPRING	
322	*X-3686-529-1	BASE ASSY, CHANGE GEAR	
323	X-3686-520-1	GEAR ASSY, CHANGE	
324	*3-686-596-01	FLANGE, GEAR	
325	*3-686-648-01	HOLDER, WIRE	
326	3-686-646-01	BELT, TIMING	
327	*3-686-991-01	STOPPER, REEL TABLE	
328	3-669-480-11	+ PTPWH 2	
329	3-701-436-11	WASHER, 1.6	
330	3-686-559-01	WASHER	
331	X-3686-590-1	BRAKE ASSY, REV	

5-8. CHASSIS ASSEMBLY 3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P2 x 4
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P2 x 4
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BVTT2 x 6
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E2.3
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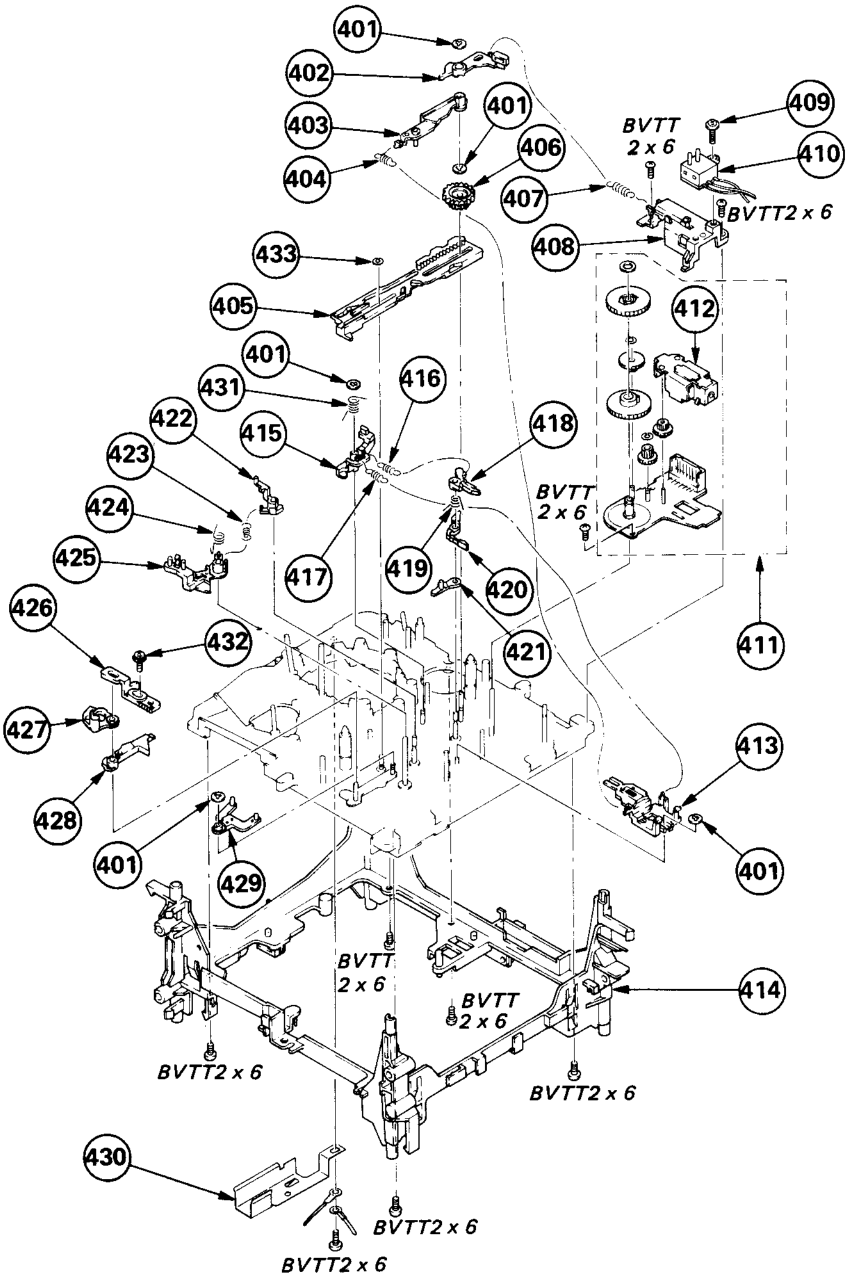
BVTT2 x 6
BVTT2 x 6
372

No.	Part No.	Description	Remark
351	X-3686-569-1	SCREW ASSY, FITTING	
352	3-686-702-01	GEAR, DRIVING, GUIDE, SLANT	
353	*X-3686-548-2	SLIDER SUB ASSY, L	
354	3-686-886-01	SPRING, TENSION	
355	3-669-465-00	WASHER (1.5), STOPPER	
356	*X-3686-518-1	ARM ASSY	
357	3-686-540-01	SPRING, TORSION	
358	X-3686-579-1	CHANGE ASSY, DRIVE	
359	X-3686-549-1	L-SW ASSY	
360	A-7040-011-A	GUIDE BLOCK COMPLETE ASSY, #5	361, 362
361	3-686-724-01	NUT, GUIDE	
362	3-686-889-01	SPRING, COMPRESSION	
363	*3-686-894-01	FLANGE, #3 #4 GUIDE	
364	3-686-912-01	GUIDE, #3 #4	
365	3-669-666-00	SPRING, COMPRESSION	
366	3-686-539-01	GEAR, NO.9	
367	3-686-535-01	GEAR, NO.8	
368	*X-3686-509-1	LEVER ASSY, PINCH PRESS	
369	1-535-535-11	TERMINAL, SHAFT GROUND	
370	X-3686-521-1	BASE ASSY, IDLER	
371	X-3686-522-1	IDLER ASSY	
372	3-686-559-01	WASHER	
373	A-7048-004-A	DRUM ASSY(DVH-03A-R)	374-378
374	A-7049-005-A	DRUM ASSY, ROTARY(UPPER)(DVR-03-R) COLOR DOT:BLUE or RED	
	A-7049-012-A	DRUM ASSY, ROTARY(UPPER)(DVR-03-R-(0)) COLOR DOT:BLACK or GREEN	
375	3-686-403-01	SCREW(2X5), BOLT WASHER	
376	3-686-422-01	WASHER(2X2.7), BOLT, HOLE	
377	1-806-975-11	SENSOR, DEW CONDENSATION	
378	1-806-911-11	HEATER	
379	*3-688-917-01	STOPPER, TAPE	

5-9. CHASSIS ASSEMBLY 4



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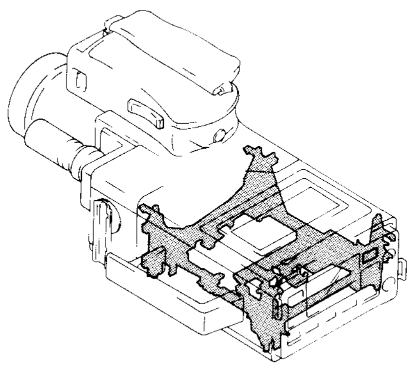
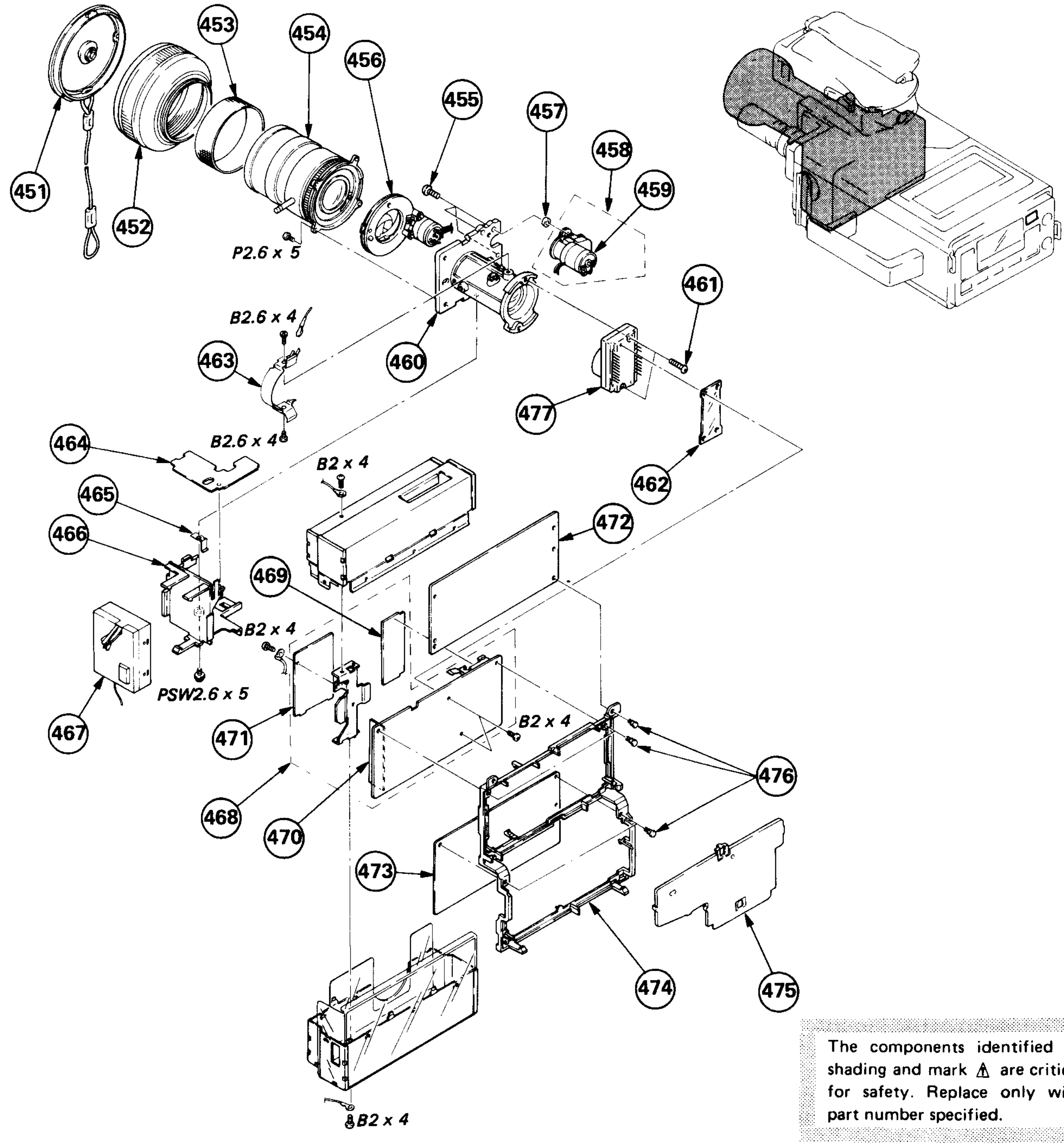
BVTT2 x 6



The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remark
401	3-669-465-00	WASHER (1.5), STOPPER	
402	X-3686-511-1	BRAKE ASSY, T.S	
403	*X-3686-528-1	ARM ASSY, B RELEASE	
404	3-686-903-01	SPRING, TENSION	
405	*3-686-657-01	SLIDER, M	
406	3-686-909-01	GEAR, MODE OUTPUT	
407	3-693-223-01	SPRING, TENSION	
408	*3-686-759-01	COVER, CONTROL MOTOR	
409	3-669-480-11	+ PTPWH 2	
410	1-554-942-11	SWITCH, PUSH (RECOG) S902	
411	A-7040-003-A	M-SW ASSY	412
412	⚠8-835-110-01	MOTOR, DC (DNR-5301A) (CONTROL) M903	
413	*3-686-656-01	SLIDER, B RELEASE	
414	X-3686-554-2	FRAME ASSY, MOLD	
415	*3-686-634-01	ARM, RL	
416	3-686-906-01	SPRING, TENSION	
417	3-686-904-01	SPRING, TENSION	
418	X-3686-510-1	BRAKE ASSY, REW	
419	3-686-617-01	SPRING	
420	*3-686-638-01	ARM, RVS	
421	*3-686-580-01	ARM, SET UP	
422	3-686-996-01	BRAKE (S), HARD	
423	3-686-905-02	SPRING, TENSION	
424	3-686-603-01	SPRING	
425	*3-686-644-01	ARM, BAND	
426	*3-686-642-01	PLATE, ADJUSTMENT, BAND	
427	*3-686-755-01	DISK, EJECT	
428	*3-686-643-01	ARM, MODE	
429	*X-3686-530-1	ARM (A) ASSY, SELECTION	
430	*3-686-966-01	PLATE, SHIELD, HEAD LEAD	
431	3-686-579-01	SPRING	
432	3-686-528-01	SCREW (2X6), +	
433	3-686-559-01	WASHER	

5-10. CAMERA ASSEMBLY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B2 x 4
PSW2.6 x 5
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B2 x 4
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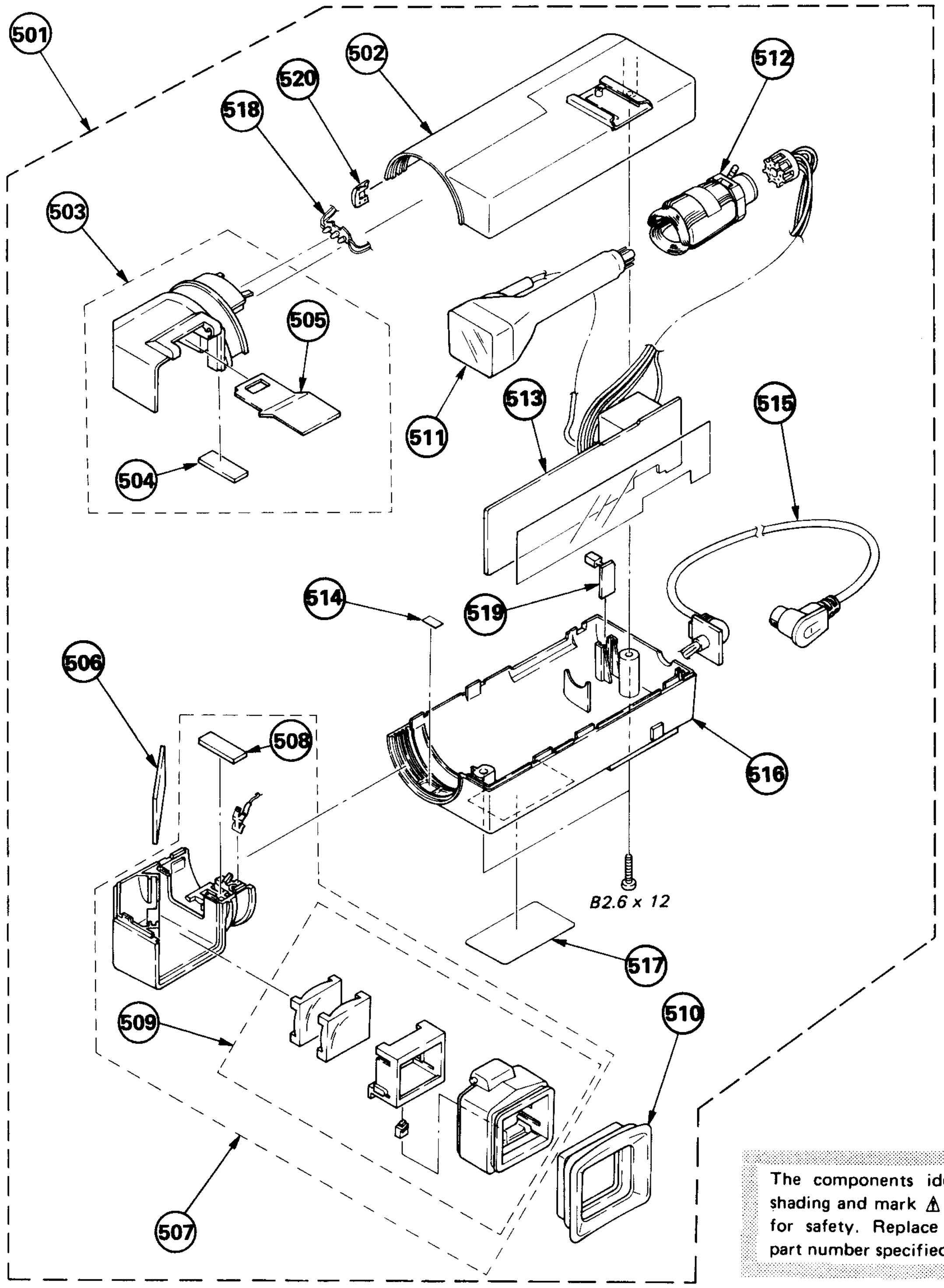
475
B2 x 4

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remark
451	X-3686-553-1	CAP ASSY, HOOD	
452	3-686-840-01	HOOD	
453	3-707-052-01	KNURL, FOCUS RUBBER	
454	3-707-051-01	LENS (MAIN)	
455	3-707-056-01	SCREW, MOTOR	
456	3-707-053-01	IRIS ASSY	
457	3-707-054-01	BUSHING, RUBBER	
458	3-707-024-01	DECELERATOR ASSY, ZOOM MOTOR	459
459	⚠ 8-835-112-01	MOTOR, DC (DNR-6300B) (ZOOM) M904	
460	*3-707-055-01	MOUNT BLOCK	
461	3-686-811-01	SCREW (2X12), SMALL	
462	3-686-940-01	SHEET, INSULATING, CCD HOLDER	
463	*3-686-799-01	SPRING	
464	*A-7060-108-A	ZM-2 BOARD, COMPLETE	
465	*3-686-941-01	SPRING	
466	*3-686-834-01	HOLDER, DC/DC	
467	⚠1-464-377-12	CONVERTER, DC-DC (CAMERA) DR902	
468	*A-7060-041-A	CP-11 BOARD, COMPLETE	469-471
469	*A-7060-043-A	OS-2 BOARD, COMPLETE	
470	*A-7070-031-A	VR-9 BOARD, COMPLETE	
471	*A-7060-042-A	DR-30 BOARD, COMPLETE	
472	*A-7060-044-A	ME-2 BOARD, COMPLETE	
473	*A-7060-040-A	AW-2 BOARD, COMPLETE	
474	*3-686-850-01	FRAME, CAMERA	
475	*X-3686-597-1	CASE ASSY, SHIELD, CP	
476	2-279-715-01	RIVET, NYLON	
477	8-750-010-23	CCD IMAGER BLOCK (IU021-K1AA)	

5-11. EVF (VF-206) ASSEMBLY



The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remark
501	A-7019-007-A	EVF (VF-206)	502-520
502	X-3686-610-1	CABINET (UPPER) ASSY, EVF	
503	X-3686-611-1	CABINET (UPPER) ASSY, CR	504,505
504	3-686-855-01	CUSHION, CRT	
505	3-688-956-01	SPRING	
506	3-688-959-01	MIRROR	
507	X-3686-612-1	CABINET (LOWER) ASSY, CR	508,509
508	3-686-855-01	CUSHION, CRT	
509	X-3686-567-1	TABLE ASSY, LENS	
510	3-686-861-01	CAP, EYE	
511	⚠1-546-051-11	CATHODE-RAY TUBE, B/W (C1M30P4)V901	
512	⚠1-451-251-22	DEFLECTION YOKE (MONOCHROME)L901	
513	*A-7060-103-A	VF-4 BOARD, COMPLETE	
514	3-688-939-01	SPRING, LEAF	
515	1-556-824-31	CORD, CONNECTION (WITH PLUG)8P	
516	X-3686-609-1	CABINET (LOWER) ASSY, EVF	
517	*3-688-962-01	LABEL, MODEL NUMBER, EVF	
518	*1-614-872-11	TL-16 BOARD	
519	*1-614-871-11	TL-15 BOARD	
520	3-688-978-01	PLATE, ORNAMENTAL	

5-12. HARDWARE LIST

SCREW

7-621-255-10	SCREW +P 2X3
7-621-255-15	SCREW +P 2X3
7-621-255-20	SCREW +P 2X4
7-621-255-45	SCREW +P 2X6
7-621-255-50	SCREW +P 2X8
7-621-255-75	SCREW +P 2X12
7-621-591-00	SCREW +K 2X4
7-621-759-35	+PSW, 2.6X5
7-621-772-18	SCREW +B 2X4
7-621-772-30	SCREW +B 2X6
7-621-772-38	SCREW +B 2X6
7-621-772-50	SCREW +B 2X10
7-621-772-58	SCREW +B 2X10
7-621-773-86	SCREW +B 2.6X4
7-621-775-10	SCREW +B 2.6X4
7-627-553-38	SCREW, PRECISION +P 2X3
7-627-553-48	SCREW, PRECISION +P 2X4
7-627-553-68	SCREW, PRECISION +P 2X6
7-627-850-18	SCREW, PRECISION +P 1.4X2.5
7-682-547-09	SCREW +B 3X6
7-685-107-11	SCREW +P 2X12 TYPE2 NON-SLIT
7-685-533-19	SCREW +BTP 2.6X6 TYPE2 N-S
7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S
7-685-536-19	SCREW +BTP 2.6X12 TYPE2 N-S
7-685-853-01	SCREW +BVTT 2X6 (S)

STOP RING

7-624-102-04	STOP RING 1.5, TYPE -E
7-624-105-04	STOP RING 2.3, TYPE -E
7-624-106-04	STOP RING 3.0, TYPE -E

WASHER

7-688-002-12	W 2.6, MIDDLE

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS

- All resistors are in ohms
- F : nonflammable

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

CAPACITORS

- MF : μF, PF : μμF

COILS

- MMH : mH, UH : μH

Ref No.	Part No.	Description			Remark
	*A-7060-040-A	AW-2 BOARD, COMPLETE			
		CAPACITOR			
C702	1-124-225-00	ELECT	100MF	20%	6.3V
C703	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C704	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C705	1-124-251-00	ELECT	0.22MF	20%	50V
C706	1-131-378-00	TANTALUM	15MF	10%	10V
C717	1-131-408-00	TANTALUM	1MF	20%	25V
C719	1-124-225-00	ELECT	100MF	20%	6.3V
C720	1-124-255-00	ELECT	1MF	20%	50V
C721	1-124-225-00	ELECT	100MF	20%	6.3V
C722	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V
C723	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V
C724	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V
C725	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C726	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C727	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C728	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C729	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C730	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C731	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C732	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C733	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C734	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V
C735	1-131-374-00	TANTALUM	33MF	20%	16V
C742	1-124-270-11	ELECT	0.47MF	20%	50V
C743	1-124-270-11	ELECT	0.47MF	20%	50V
C744	1-135-096-21	TANTAL. CHIP	4.7MF	20%	10V
C746	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C747	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C748	1-135-096-21	TANTAL. CHIP	4.7MF	20%	10V
C749	1-124-275-00	ELECT	2.2MF	20%	35V
C750	1-163-075-00	CERAMIC CHIP	0.047MF	10%	25V
C751	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C752	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C753	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C755	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C756	1-124-225-00	ELECT	100MF	20%	6.3V
C757	1-124-225-00	ELECT	100MF	20%	6.3V
C758	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C759	1-124-236-00	ELECT	47MF	20%	16V
C760	1-124-236-00	ELECT	47MF	20%	16V
C761	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C762	1-124-234-00	ELECT	22MF	20%	16V
C763	1-124-234-00	ELECT	22MF	20%	16V
C764	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C765	1-124-247-00	ELECT	10MF	20%	35V
C766	1-124-247-00	ELECT	10MF	20%	35V
C767	1-124-229-00	ELECT	33MF	20%	6.3V
C768	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C769	1-135-096-21	TANTAL. CHIP	4.7MF	20%	10V

Ref No.	Part No.	Description	Remark
		CONNECTOR	
CN701	*1-564-018-11	PIN, CONNECTOR 8P	
CN702	*1-564-016-00	PIN, CONNECTOR 6P	
CN703	*1-564-014-00	PIN, CONNECTOR 4P	
		DIODE	
D702	8-719-100-05	DIODE 1S2837	
D706	8-719-100-05	DIODE 1S2837	
D708	8-719-100-05	DIODE 1S2837	
D709	8-719-100-05	DIODE 1S2837	
D710	8-719-100-03	DIODE 1S2835	
D711	8-719-100-05	DIODE 1S2837	
D715	8-719-101-23	DIODE 1SS123	
D716	8-719-100-05	DIODE 1S2837	
D717	8-719-100-05	DIODE 1S2837	
		IC	
IC701	8-759-201-00	IC TC4052BF	
IC702	8-759-100-94	IC UPC358G2	
IC703	8-759-103-03	IC UPD6107G	
IC705	8-759-100-94	IC UPC358G2	
IC706	8-759-908-12	IC CX20056	
		COIL	
L708	1-410-124-11	COIL, CHOKE 47UH	
L709	1-410-124-11	COIL, CHOKE 47UH	
L710	1-408-970-21	MICRO INDUCTOR 10UH	
L711	1-408-970-21	MICRO INDUCTOR 10UH	
		TRANSISTOR	
Q704	8-729-901-03	TRANSISTOR DTC144WK	
Q707	8-729-901-04	TRANSISTOR DTA114EK	
Q708	8-729-901-04	TRANSISTOR DTA114EK	
Q709	8-729-100-66	TRANSISTOR 2SC1623	
Q710	8-729-100-76	TRANSISTOR 2SA812	
Q711	8-729-100-76	TRANSISTOR 2SA812	
Q712	8-729-100-66	TRANSISTOR 2SC1623	
Q713	8-729-100-76	TRANSISTOR 2SA812	
Q714	8-729-100-76	TRANSISTOR 2SA812	
Q715	8-729-100-66	TRANSISTOR 2SC1623	
Q716	8-729-100-76	TRANSISTOR 2SA812	
Q717	8-729-901-04	TRANSISTOR DTA114EK	
Q718	8-729-100-76	TRANSISTOR 2SA812	
Q721	8-729-100-66	TRANSISTOR 2SC1623	
Q722	8-729-100-66	TRANSISTOR 2SC1623	
Q723	8-729-901-03	TRANSISTOR DTC144WK	
Q724	8-729-100-76	TRANSISTOR 2SA812	
Q725	8-729-100-66	TRANSISTOR 2SC1623	
Q726	8-729-100-66	TRANSISTOR 2SC1623	
Q728	8-729-901-03	TRANSISTOR DTC144WK	
Q729	8-729-901-04	TRANSISTOR DTA114EK	
Q730	8-729-100-76	TRANSISTOR 2SA812	
Q732	8-729-901-03	TRANSISTOR DTC144WK	

Ref No.	Part No.	Description	Remark
Q733	8-729-100-76	TRANSISTOR 2SA812	
Q734	8-729-100-66	TRANSISTOR 2SC1623	

RESISTOR

Ref No.	Part No.	Description				Remark
R704	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R705	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R707	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R708	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R709	1-216-035-00	METAL CHIP	270	5%	1/10W	
R712	1-216-107-00	METAL CHIP	270K	5%	1/10W	
R714	1-216-035-00	METAL CHIP	270	5%	1/10W	
R715	1-216-022-00	METAL CHIP	75	5%	1/10W	
R716	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R717	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R718	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R719	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R722	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R723	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R724	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R725	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R726	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R727	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R728	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R729	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R730	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R731	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R732	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R733	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R734	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R735	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R736	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R737	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R738	1-216-087-00	METAL CHIP	39K	5%	1/10W	
R739	1-216-087-00	METAL CHIP	39K	5%	1/10W	
R740	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R741	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R742	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R743	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R744	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R745	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R746	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R747	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R748	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R749	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R750	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R751	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R753	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R755	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R756	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R757	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R759	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R760	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R761	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R762	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R763	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R764	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R765	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R766	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R767	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R768	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R769	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R771	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R772	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R775	⚠1-216-049-91	METAL CHIP	1K	5%	1/10W	
R778	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R780	1-216-125-00	METAL CHIP	1.5M	5%	1/10W	
R781	1-216-107-00	METAL CHIP	270K	5%	1/10W	
R784	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R785	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R786	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R787	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R788	1-216-049-00	METAL CHIP	1K	5%	1/10W	

VARIABLE RESISTOR

Ref No.	Part No.	Description	Remark
RV701	1-228-829-21	RES, ADJ, METAL GLAZE 10K	
RV702	1-228-829-21	RES, ADJ, METAL GLAZE 10K	
RV703	1-228-829-21	RES, ADJ, METAL GLAZE 10K	
RV704	1-228-829-21	RES, ADJ, METAL GLAZE 10K	
RV706	1-228-829-21	RES, ADJ, METAL GLAZE 10K	
RV707	1-228-829-21	RES, ADJ, METAL GLAZE 10K	
RV708	1-228-829-21	RES, ADJ, METAL GLAZE 10K	
RV709	1-228-827-21	RES, ADJ, METAL GLAZE 2.2K	
RV710	1-228-828-21	RES, ADJ, METAL GLAZE 4.7K	
RV711	1-228-833-21	RES, ADJ, METAL GLAZE 100K	

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*A-7060-041-A CP-11 BOARD, COMPLETE
****

IC701 or IC706 is not mounted on the mounted CP-11 Board. Each of these ICs cannot be a repair-replacement part, but becomes a CCD imager block.

CAPACITOR

Ref No.	Part No.	Description				Remark
C702	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	
C703	1-163-077-00	CERAMIC CHIP	0.1MF		50V	
C704	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C705	1-124-229-00	ELECT	33MF	20%	10V	
C706	1-135-092-21	TANTAL. CHIP	3.3MF	20%	16V	
C707	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V	
C708	1-163-077-00	CERAMIC CHIP	0.1MF		50V	
C709	1-135-096-21	TANTAL. CHIP	4.7MF	20%	10V	
C722	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C723	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C724	1-135-091-00	TANTAL. CHIP	1MF	20%	16V	
C725	1-135-091-00	TANTAL. CHIP	1MF	20%	16V	
C726	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C727	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C728	1-135-083-00	TANTAL. CHIP	0.47MF	20%	25V	
C729	1-135-083-00	TANTAL. CHIP	0.47MF	20%	25V	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref No.	Part No.	Description		Remark
C730	1-135-083-00	TANTAL. CHIP 0.47MF	20%	25V
C731	1-135-083-00	TANTAL. CHIP 0.47MF	20%	25V
C732	1-135-083-00	TANTAL. CHIP 0.47MF	20%	25V
C733	1-135-083-00	TANTAL. CHIP 0.47MF	20%	25V
C734	1-135-083-00	TANTAL. CHIP 0.47MF	20%	25V
C735	1-135-083-00	TANTAL. CHIP 0.47MF	20%	25V
C736	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C737	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C738	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C739	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C740	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C741	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C742	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C743	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C744	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C745	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C748	1-135-096-21	TANTAL. CHIP 4.7MF	20%	10V
C749	1-163-100-00	CERAMIC CHIP 20PF	5%	50V
C750	1-124-229-00	ELECT 33MF	20%	10V
C751	1-163-100-00	CERAMIC CHIP 20PF	5%	50V
C752	1-124-229-00	ELECT 33MF	20%	10V
C753	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C754	1-163-100-00	CERAMIC CHIP 20PF	5%	50V
C755	1-124-229-00	ELECT 33MF	20%	10V
C756	1-135-096-21	TANTAL. CHIP 4.7MF	20%	10V
C757	1-124-234-00	ELECT 22MF	20%	16V
C758	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C759	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C760	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C761	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C762	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C763	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C764	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C765	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C766	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C769	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C770	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C771	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C782	1-135-083-00	TANTAL. CHIP 0.47MF	20%	25V
C783	1-135-083-00	TANTAL. CHIP 0.47MF	20%	25V
C784	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C785	1-163-125-00	CERAMIC CHIP 220PF	5%	50V
C786	1-135-092-21	TANTAL. CHIP 3.3MF	20%	16V
C790	1-124-234-00	ELECT 22MF	20%	16V
C794	1-163-157-00	CERAMIC CHIP 10PF	5%	50V
C795	1-163-093-00	CERAMIC CHIP 10PF	5%	50V
C796	1-163-093-00	CERAMIC CHIP 10PF	5%	50V
C797	1-163-093-00	CERAMIC CHIP 10PF	5%	50V
C798	1-163-205-00	CERAMIC CHIP 0.001MF	5%	50V
C803	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C804	1-163-105-00	CERAMIC CHIP 33PF	5%	50V
C806	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V
C821	1-163-127-00	CERAMIC CHIP 270PF	5%	50V
C823	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C824	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C825	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V

Ref No.	Part No.	Description			Remark
		CONNECTOR			
CN008	1-564-549-11	PIN, BOARD TO BOARD(L TYPE)10P			
CN014	1-564-549-11	PIN, BOARD TO BOARD(L TYPE)10P			
		DIODE			
D706	8-719-100-05	DIODE 1S2837			
D707	8-719-100-05	DIODE 1S2837			
D708	8-719-100-05	DIODE 1S2837			
D711	8-719-100-03	DIODE 1S2835			
D712	8-719-100-05	DIODE 1S2837			
D713	8-719-100-05	DIODE 1S2837			
D716	8-719-100-03	DIODE 1S2835			
		IC			
IC701	8-750-010-23	CCD IMAGER BLOCK (IU021-K1AA)			
IC705	8-759-000-26	IC MMH0026CP1			
IC706	8-750-010-23	CCD IMAGER BLOCK (IU021-K1AA)			
IC707	8-759-913-03	IC CX23047A			
IC708	8-757-930-02	IC CX7930-1			
IC709	8-759-908-09	IC CX20053			
		COIL			
L701	1-408-960-21	MICRO INDUCTOR 1.5UH			
		TRANSISTOR			
Q701	8-729-100-76	TRANSISTOR 2SA812			
Q703	8-729-100-66	TRANSISTOR 2SC1623			
Q704	8-729-100-66	TRANSISTOR 2SC1623			
Q705	8-729-900-53	TRANSISTOR DTC114EK			
Q706	8-729-900-53	TRANSISTOR DTC114EK			
Q707	8-729-900-53	TRANSISTOR DTC114EK			
Q708	8-729-109-44	TRANSISTOR 2SK94			
Q709	8-729-109-44	TRANSISTOR 2SK94			
Q710	8-729-109-44	TRANSISTOR 2SK94			
Q714	8-729-100-66	TRANSISTOR 2SC1623			
Q715	8-729-100-76	TRANSISTOR 2SA812			
Q716	8-729-122-63	TRANSISTOR 2SA1226			
Q717	8-729-102-08	TRANSISTOR 2SC2223-F14			
		RESISTOR			
R702	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R703	1-216-097-00	METAL CHIP	100K	5%	1/10W
R704	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R705	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R706	1-216-097-00	METAL CHIP	100K	5%	1/10W
R708	1-216-097-00	METAL CHIP	100K	5%	1/10W
R709	1-216-097-00	METAL CHIP	100K	5%	1/10W
R710	1-216-121-00	METAL CHIP	1M	5%	1/10W
R713	1-216-075-00	METAL CHIP	12K	5%	1/10W
R714	1-216-091-00	METAL CHIP	56K	5%	1/10W
R715	1-216-075-00	METAL CHIP	12K	5%	1/10W
R716	1-216-089-00	METAL CHIP	47K	5%	1/10W

When indicating parts by reference number, please include the board name.

Ref No.	Part No.	Description				Remark
R717	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R718	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R728	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R729	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R730	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R731	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R732	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R733	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R734	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R735	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R736	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R737	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R738	1-216-009-00	METAL CHIP	22	5%	1/10W	
R739	1-216-009-00	METAL CHIP	22	5%	1/10W	
R740	1-216-013-00	METAL CHIP	33	5%	1/10W	
R741	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R742	1-216-025-00	METAL CHIP	100	5%	1/10W	
R743	1-216-066-00	METAL CHIP	5.1K	5%	1/10W	
R744	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R745	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R746	1-216-087-00	METAL CHIP	39K	5%	1/10W	
R747	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R749	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R751	1-216-033-00	METAL CHIP	220	5%	1/10W	
R752	1-216-033-00	METAL CHIP	220	5%	1/10W	
R753	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R754	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R755	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R758	1-216-033-00	METAL CHIP	220	5%	1/10W	
R759	1-216-033-00	METAL CHIP	220	5%	1/10W	
R760	1-216-035-00	METAL CHIP	270	5%	1/10W	
R761	1-216-066-00	METAL CHIP	5.1K	5%	1/10W	
R762	1-216-088-00	METAL CHIP	43K	5%	1/10W	
R764	1-216-035-00	METAL CHIP	270	5%	1/10W	
R766	1-216-066-00	METAL CHIP	5.1K	5%	1/10W	
R767	1-216-035-00	METAL CHIP	270	5%	1/10W	
R769	1-216-066-00	METAL CHIP	5.1K	5%	1/10W	
R770	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R771	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R772	1-216-088-00	METAL CHIP	43K	5%	1/10W	
R773	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R774	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R775	1-216-041-00	METAL CHIP	470	5%	1/10W	
R777	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R782	1-216-295-00	METAL CHIP	0	5%	1/10W	
R783	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R784	1-216-033-00	METAL CHIP	220	5%	1/10W	
R785	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R799	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R800	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R813	1-216-033-00	METAL CHIP	220	5%	1/10W	
R814	1-216-033-00	METAL CHIP	220	5%	1/10W	
R815	1-216-033-00	METAL CHIP	220	5%	1/10W	
R816	1-216-033-00	METAL CHIP	220	5%	1/10W	
R822	1-216-025-00	METAL CHIP	100	5%	1/10W	
R823	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R826	1-216-295-00	METAL CHIP	0	5%	1/10W	

Ref No.	Part No.	Description				Remark
R830	1-216-095-00	METAL CHIP	82K	5%	1/10W	
R832	⚠1-216-025-91	METAL CHIP	100	5%	1/10W	
R834	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R835	1-216-121-00	METAL CHIP	1M	5%	1/10W	

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*A-7060-042-A DR-30 BOARD, COMPLETE
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*3-686-930-01 HEAT SINK
7-621-772-18 SCREW +B 2 X 4

CAPACITOR

C711	1-124-233-00	ELECT	10MF	20%	16V
C712	1-135-076-21	TANTAL. CHIP	1MF	20%	35V
C713	1-135-092-21	TANTAL. CHIP	3.3MF	20%	16V
C714	1-135-092-21	TANTAL. CHIP	3.3MF	20%	16V
C715	1-124-258-00	ELECT	3.3MF	20%	50V
C716	1-124-258-00	ELECT	3.3MF	20%	50V
C717	1-135-092-21	TANTAL. CHIP	3.3MF	20%	16V
C718	1-135-083-00	TANTAL. CHIP	0.47MF	20%	25V
C719	1-135-083-00	TANTAL. CHIP	0.47MF	20%	25V
C720	1-135-083-00	TANTAL. CHIP	0.47MF	20%	25V
C721	1-135-083-00	TANTAL. CHIP	0.47MF	20%	25V
C781	1-135-091-00	TANTAL. CHIP	1MF	20%	16V
C787	1-135-083-00	TANTAL. CHIP	0.47MF	20%	25V
C788	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C789	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C800	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C801	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C802	1-163-077-00	CERAMIC CHIP	0.1MF		50V

DIODE

D701	8-719-100-03	DIODE 1S2835
D702	8-719-101-23	DIODE 1SS123
D703	8-719-951-12	DIODE HZ5BLL
D704	8-719-100-03	DIODE 1S2835
D705	8-719-100-03	DIODE 1S2835
D714	8-719-100-03	DIODE 1S2835
D715	8-719-100-03	DIODE 1S2835

IC

IC702	8-759-953-61	IC SN75361AP
IC703	8-759-953-61	IC SN75361AP

TRANSISTOR

Q702	8-729-100-66	TRANSISTOR 2SC1623
Q718	8-729-100-76	TRANSISTOR 2SA812
Q719	8-729-100-66	TRANSISTOR 2SC1623
Q720	8-729-100-76	TRANSISTOR 2SA812
Q721	8-729-100-76	TRANSISTOR 2SA812
Q722	8-729-100-66	TRANSISTOR 2SC1623
Q726	⚠8-729-901-04	TRANSISTOR DTA114EK
Q727	⚠8-729-901-03	TRANSISTOR DTC144WK

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

RESISTOR

Ref No.	Part No.	Description				Remark
R711	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R712	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R719	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R720	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R721	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R722	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R723	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R802	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R803	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R804	1-216-043-00	METAL CHIP	560	5%	1/10W	
R805	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R807	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R820	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R821	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R828 ⚠	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R829 ⚠	1-216-075-00	METAL CHIP	12K	5%	1/10W	

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*A-7060-043-A OS-2 BOARD, COMPLETE
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CAPACITOR

Ref No.	Part No.	Description				Remark
C710	1-135-096-21	TANTAL. CHIP	4.7MF	20%	10V	
C772	1-163-077-00	CERAMIC CHIP	0.1MF		50V	
C773	1-135-095-00	TANTAL. CHIP	1.5MF	20%	10V	
C774	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V	
C775	1-163-221-00	CERAMIC CHIP	4PF	0.25PF	50V	
C776	1-163-258-91	CERAMIC CHIP	200PF	5%	50V	
C777	1-163-119-00	CERAMIC CHIP	120PF	5%	50V	
C779	1-163-261-11	CERAMIC CHIP	270PF	5%	50V	
C780	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V	

DIODE

Ref No.	Part No.	Description	Remark
D710	8-713-220-00	DIODE 1T32-2	
D717	8-719-101-23	DIODE 1SS123	

TRANSISTOR

Ref No.	Part No.	Description	Remark
Q711	8-729-100-66	TRANSISTOR 2SC1623	
Q712	8-729-162-13	TRANSISTOR 2SC1621	

RESISTOR

Ref No.	Part No.	Description				Remark
R786	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R787	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R788	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R789	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R790	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R791	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R792	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R795	1-216-041-00	METAL CHIP	470	5%	1/10W	
R798	1-216-033-00	METAL CHIP	220	5%	1/10W	

CRYSTAL

Ref No.	Part No.	Description	Remark
X701	1-567-343-11	OSCILLATOR, CRYSTAL (28.4MHZ)	
X702	1-567-344-21	VIBRATOR, CRYSTAL (VCO) (17.7MHZ)	

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*A-7070-031-A VR-9 BOARD, COMPLETE
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CAPACITOR

Ref No.	Part No.	Description				Remark
C746	1-124-229-00	ELECT	33MF	20%	10V	
C747	1-124-229-00	ELECT	33MF	20%	10V	

DIODE

Ref No.	Part No.	Description	Remark
D709	8-719-100-05	DIODE 1S2837	

TRANSISTOR

Ref No.	Part No.	Description	Remark
Q723	8-729-100-66	TRANSISTOR 2SC1623	
Q724	8-729-100-66	TRANSISTOR 2SC1623	
Q725	8-729-100-66	TRANSISTOR 2SC1623	

RESISTOR

Ref No.	Part No.	Description				Remark
R748	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R750	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R808	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R809	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R810	1-216-295-00	METAL CHIP	0	5%	1/10W	
R811	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R812	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	

VARIABLE RESISTOR

Ref No.	Part No.	Description	Remark
RV701	1-228-829-21	RES, ADJ, METAL GLAZE 10K	
RV702	1-228-829-21	RES, ADJ, METAL GLAZE 10K	
RV703	1-228-829-21	RES, ADJ, METAL GLAZE 10K	
RV704	1-228-829-21	RES, ADJ, METAL GLAZE 10K	
RV705	1-228-829-21	RES, ADJ, METAL GLAZE 10K	
RV706	1-228-829-21	RES, ADJ, METAL GLAZE 10K	
RV707	1-228-829-21	RES, ADJ, METAL GLAZE 10K	
RV708	1-228-830-21	RES, ADJ, METAL GLAZE 22K	

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*A-7060-044-A ME-2 BOARD, COMPLETE
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CAPACITOR

Ref No.	Part No.	Description				Remark
C701	1-135-091-00	TANTAL. CHIP	1MF	20%	16V	
C702	1-163-077-00	CERAMIC CHIP	0.1MF		50V	
C703	1-135-092-21	TANTAL. CHIP	3.3MF	20%	16V	
C704	1-124-234-00	ELECT	22MF	20%	16V	
C705	1-135-096-21	TANTAL. CHIP	4.7MF	20%	10V	
C706	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C707	1-163-077-00	CERAMIC CHIP	0.1MF		50V	
C708	1-163-077-00	CERAMIC CHIP	0.1MF		50V	
C709	1-135-095-00	TANTAL. CHIP	1.5MF	20%	10V	
C710	1-135-096-21	TANTAL. CHIP	4.7MF	20%	10V	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

ME-2

Ref No.	Part No.	Description		Remark
C711	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C712	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C713	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C714	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C715	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C716	1-135-096-21	TANTAL. CHIP 4.7MF	20%	10V
C717	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C718	1-131-374-00	TANTALUM 33MF	20%	16V
C719	1-163-125-00	CERAMIC CHIP 220PF	5%	50V
C720	1-163-121-00	CERAMIC CHIP 150PF	5%	50V
C721	1-163-107-00	CERAMIC CHIP 39PF	5%	50V
C722	1-131-374-00	TANTALUM 33MF	20%	16V
C723	1-163-119-00	CERAMIC CHIP 120PF	5%	50V
C724	1-163-118-00	CERAMIC CHIP 110PF	5%	50V
C725	1-163-122-00	CERAMIC CHIP 160PF	5%	50V
C726	1-163-112-00	CERAMIC CHIP 62PF	5%	50V
C727	1-163-119-00	CERAMIC CHIP 120PF	5%	50V
C728	1-163-118-00	CERAMIC CHIP 110PF	5%	50V
C729	1-163-122-00	CERAMIC CHIP 160PF	5%	50V
C730	1-163-112-00	CERAMIC CHIP 62PF	5%	50V
C731	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C732	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C733	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C734	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C735	1-124-231-61	ELECT 4.7MF	20%	16V
C736	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C737	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C739	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C740	1-163-013-00	CERAMIC CHIP 0.0022MF	10%	50V
C741	1-124-225-00	ELECT 100MF	20%	6.3V
C742	1-124-225-00	ELECT 100MF	20%	6.3V
C743	1-124-231-61	ELECT 4.7MF	20%	16V
C744	1-124-229-00	ELECT 33MF	20%	10V
C745	1-124-287-00	ELECT 10MF	20%	10V
C746	1-124-287-00	ELECT 10MF	20%	10V
C747	1-124-231-61	ELECT 4.7MF	20%	16V
C748	1-163-121-00	CERAMIC CHIP 150PF	5%	50V
C749	1-124-255-00	ELECT 1MF	20%	50V
C750	1-124-255-00	ELECT 1MF	20%	50V
C751	1-124-255-00	ELECT 1MF	20%	50V
C754	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C755	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C756	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C757	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C758	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C759	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C760	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C761	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C762	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C763	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C764	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C767	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C768	1-163-113-00	CERAMIC CHIP 68PF	5%	50V
C769	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C770	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V

CONNECTOR

Ref No.	Part No.	Description		Remark
CN704	*1-564-017-00	PIN, CONNECTOR 7P		
CN705	*1-564-018-11	PIN, CONNECTOR 8P		

DIODE

Ref No.	Part No.	Description		Remark
D701	8-719-100-05	DIODE 1S2837		
D702	8-719-101-23	DIODE 1SS123		
D703	8-719-100-05	DIODE 1S2837		

DELAY LINE

Ref No.	Part No.	Description		Remark
DL701	1-415-238-00	DELAY LINE		

FILTER

Ref No.	Part No.	Description		Remark
FL701	1-235-442-11	FILTER, LOW PASS (YH)		
FL702	1-235-439-11	FILTER, BAND PASS (4.43MHZ)		

IC

Ref No.	Part No.	Description		Remark
IC701	8-752-303-90	IC CX23039		
IC702	8-752-015-10	IC CX20151		
IC703	8-759-908-11	IC CX20055		
IC704	8-759-908-15	IC TL431CLP		

COIL

Ref No.	Part No.	Description		Remark
L701	1-408-960-21	MICRO INDUCTOR 1.5UH		
L702	1-408-960-21	MICRO INDUCTOR 1.5UH		

TRANSISTOR

Ref No.	Part No.	Description		Remark
Q701	8-729-100-66	TRANSISTOR 2SC1623		
Q702	8-729-100-66	TRANSISTOR 2SC1623		
Q703	8-729-100-66	TRANSISTOR 2SC1623		
Q704	8-729-100-66	TRANSISTOR 2SC1623		
Q705	8-729-100-66	TRANSISTOR 2SC1623		
Q706	8-729-100-66	TRANSISTOR 2SC1623		
Q707	8-729-100-66	TRANSISTOR 2SC1623		
Q708	8-729-100-66	TRANSISTOR 2SC1623		
Q709	8-729-100-66	TRANSISTOR 2SC1623		
Q710	8-729-100-66	TRANSISTOR 2SC1623		
Q711	8-729-100-66	TRANSISTOR 2SC1623		
Q712	8-729-100-66	TRANSISTOR 2SC1623		
Q713	8-729-100-66	TRANSISTOR 2SC1623		
Q714	8-729-100-66	TRANSISTOR 2SC1623		
Q715	8-729-901-03	TRANSISTOR DTC144WK		
Q716	8-729-901-03	TRANSISTOR DTC144WK		
Q717	8-729-901-03	TRANSISTOR DTC144WK		
Q718	8-729-900-99	TRANSISTOR DTA144WK		
Q719	8-729-901-03	TRANSISTOR DTC144WK		
Q720	⚠8-729-901-04	TRANSISTOR DTA114EK		
Q721	⚠8-729-901-03	TRANSISTOR DTC144WK		

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

RESISTOR

Ref No.	Part No.	Description	Remark
R701	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R703	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R704	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R706	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R707	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R708	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R709	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R710	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R711	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R712	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R713	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R714	1-216-068-00	METAL CHIP 6.2K 5% 1/10W	
R716	1-216-056-00	METAL CHIP 2K 5% 1/10W	
R717	1-216-056-00	METAL CHIP 2K 5% 1/10W	
R718	1-216-056-00	METAL CHIP 2K 5% 1/10W	
R719	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R720	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R721	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R722	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R723	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R724	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R725	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R726	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R727	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R728	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R729	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R730	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R731	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R732	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R733	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R734	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R735	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R736	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R737	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R738	1-216-082-00	METAL CHIP 24K 5% 1/10W	
R739	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R740	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R741	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R742	1-216-037-00	METAL CHIP 330 5% 1/10W	
R744	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R745	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R746	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R747	1-216-087-00	METAL CHIP 39K 5% 1/10W	
R748	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R749	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R750	1-216-087-00	METAL CHIP 39K 5% 1/10W	
R751	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R752	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R753	1-216-018-00	METAL CHIP 51 5% 1/10W	
R754	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R755	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R756	1-216-035-00	METAL CHIP 270 5% 1/10W	
R760	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R761	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R762	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R763	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R764	⚠1-216-073-91	METAL CHIP 10K 5% 1/10W	
R765	⚠1-216-075-91	METAL CHIP 12K 5% 1/10W	
R766	1-216-025-00	METAL CHIP 100 5% 1/10W	
R767	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R768	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R769	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R770	1-216-079-00	METAL CHIP 18K 5% 1/10W	

VARIABLE RESISTOR

Ref No.	Part No.	Description	Remark
RV701	1-228-829-21	RES, ADJ, METAL GLAZE 10K	
RV702	1-228-829-21	RES, ADJ, METAL GLAZE 10K	
RV703	1-228-829-21	RES, ADJ, METAL GLAZE 10K	
RV704	1-228-829-21	RES, ADJ, METAL GLAZE 10K	
RV705	1-228-829-21	RES, ADJ, METAL GLAZE 10K	
RV706	1-228-829-21	RES, ADJ, METAL GLAZE 10K	
RV707	1-228-829-21	RES, ADJ, METAL GLAZE 10K	
RV708	1-228-829-21	RES, ADJ, METAL GLAZE 10K	
RV709	1-228-829-21	RES, ADJ, METAL GLAZE 10K	
RV710	1-228-829-21	RES, ADJ, METAL GLAZE 10K	
RV711	1-228-829-21	RES, ADJ, METAL GLAZE 10K	
RV712	1-228-829-21	RES, ADJ, METAL GLAZE 10K	
RV713	1-228-829-21	RES, ADJ, METAL GLAZE 10K	
RV714	1-228-829-21	RES, ADJ, METAL GLAZE 10K	
RV715	1-228-829-21	RES, ADJ, METAL GLAZE 10K	
RV716	1-228-829-21	RES, ADJ, METAL GLAZE 10K	
RV717	1-228-829-21	RES, ADJ, METAL GLAZE 10K	
RV718	1-228-829-21	RES, ADJ, METAL GLAZE 10K	

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*A-7060-046-A VI-7 BOARD, COMPLETE

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Ref No.	Part No.	Description	Remark
	2-279-715-21	RIVET, NYLON	
	3-686-934-01	REINFORCEMENT (A), FLAT CABLE	

CAPACITOR

Ref No.	Part No.	Description	Remark
C101	1-163-243-00	CERAMIC CHIP 47PF 5% 50V	
C102	1-163-249-00	CERAMIC CHIP 82PF 5% 50V	
C103	1-163-257-00	CERAMIC CHIP 180PF 5% 50V	
C104	1-163-033-00	CERAMIC CHIP 0.022MF 50V	
C105	1-163-033-00	CERAMIC CHIP 0.022MF 50V	
C106	1-163-235-00	CERAMIC CHIP 22PF 5% 50V	
C107	1-163-243-00	CERAMIC CHIP 47PF 5% 50V	
C108	1-163-031-00	CERAMIC CHIP 0.01MF 50V	
C109	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C110	1-101-888-00	CERAMIC 68PF 5% 50V	
C111	1-163-113-00	CERAMIC CHIP 68PF 5% 50V	
C112	1-163-237-00	CERAMIC CHIP 27PF 5% 50V	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

VI-7

Ref No.	Part No.	Description		Remark
C113	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C114	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C115	1-135-096-21	TANTAL. CHIP 4.7MF	10%	10V
C116	1-135-096-21	TANTAL. CHIP 4.7MF	10%	10V
C117	1-124-442-00	ELECT 330MF	20%	6.3V
C118	1-135-091-00	TANTAL. CHIP 1MF	10%	16V
C119	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C131	1-135-072-21	TANTAL. CHIP 0.22MF	10%	35V
C132	1-135-100-21	TANTAL. CHIP 6.8MF	10%	6.3V
C133	1-135-099-00	TANTAL. CHIP 2.2MF	10%	6.3V
C134	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C135	1-135-099-00	TANTAL. CHIP 2.2MF	10%	6.3V
C136	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C137	1-135-100-21	TANTAL. CHIP 6.8MF	10%	6.3V
C139	1-163-129-00	CERAMIC CHIP 330PF	5%	50V
C141	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C142	1-163-133-00	CERAMIC CHIP 470PF	5%	50V
C143	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C144	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C145	1-163-007-00	CERAMIC CHIP 680PF	10%	50V
C146	1-163-031-00	CERAMIC CHIP 0.01MF		50V
C147	1-135-100-21	TANTAL. CHIP 6.8MF	10%	6.3V
C148	1-135-100-21	TANTAL. CHIP 6.8MF	10%	6.3V
C149	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C150	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C151	1-135-104-00	TANTAL. CHIP 10MF	10%	4V
C152	1-163-031-00	CERAMIC CHIP 0.01MF		50V
C153	1-163-235-00	CERAMIC CHIP 22PF	5%	50V
C154	1-163-111-00	CERAMIC CHIP 56PF	5%	50V
C155	1-163-031-00	CERAMIC CHIP 0.01MF		50V
C165	1-135-096-21	TANTAL. CHIP 4.7MF	10%	10V
C167	1-135-096-21	TANTAL. CHIP 4.7MF	10%	10V
C168	1-135-099-00	TANTAL. CHIP 2.2MF	10%	6.3V
C169	1-163-031-00	CERAMIC CHIP 0.01MF		50V
C170	1-163-031-00	CERAMIC CHIP 0.01MF		50V
C171	1-135-100-21	TANTAL. CHIP 6.8MF	10%	6.3V
C172	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C174	1-135-099-00	TANTAL. CHIP 2.2MF	10%	6.3V
C175	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C176	1-163-111-00	CERAMIC CHIP 56PF	5%	50V
C178	1-135-096-21	TANTAL. CHIP 4.7MF	10%	10V
C179	1-163-111-00	CERAMIC CHIP 56PF	5%	50V
C180	1-163-133-00	CERAMIC CHIP 470P	5%	50V
C181	1-163-111-00	CERAMIC CHIP 56PF	5%	50V
C182	1-135-100-21	TANTAL. CHIP 6.8MF	10%	6.3V
C183	1-163-031-00	CERAMIC CHIP 0.01MF		50V
C184	1-135-100-21	TANTAL. CHIP 6.8MF	10%	6.3V
C185	1-163-075-00	CERAMIC CHIP 0.047MF	10%	25V
C186	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V
C187	1-163-075-00	CERAMIC CHIP 0.047MF	10%	25V
C188	1-163-074-00	CERAMIC CHIP 0.033MF	10%	25V
C189	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C190	1-163-075-00	CERAMIC CHIP 0.047MF	10%	25V

Ref No.	Part No.	Description		Remark
C191	1-135-099-00	TANTAL. CHIP 2.2MF	10%	6.3V
C192	1-163-145-00	CERAMIC CHIP 0.0015MF	10%	50V
C193	1-163-131-00	CERAMIC CHIP 390PF	5%	50V
C196	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C199	1-163-031-00	CERAMIC CHIP 0.01MF		50V
C200	1-135-100-21	TANTAL. CHIP 6.8MF	10%	6.3V
C201	1-163-031-00	CERAMIC CHIP 0.01MF		50V
C202	1-135-100-21	TANTAL. CHIP 6.8MF	10%	6.3V
C203	1-163-074-00	CERAMIC CHIP 0.033MF	10%	25V
C204	1-163-003-00	CERAMIC CHIP 330PF	10%	50V
C205	1-163-031-00	CERAMIC CHIP 0.01MF		50V
C206	1-135-100-21	TANTAL. CHIP 6.8MF	10%	6.3V
C207	1-163-222-00	CERAMIC CHIP 5PF	0.25PF	50V
C208	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C209	1-163-031-00	CERAMIC CHIP 0.01MF		50V
C210	1-163-031-00	CERAMIC CHIP 0.01MF		50V
C211	1-163-131-00	CERAMIC CHIP 390PF	5%	50V
C212	1-163-003-00	CERAMIC CHIP 330PF	10%	50V
C213	1-163-243-00	CERAMIC CHIP 47PF	5%	50V
C214	1-135-099-00	TANTAL. CHIP 2.2MF	10%	6.3V
C215	1-163-249-00	CERAMIC CHIP 82PF	5%	50V
C216	1-163-143-00	CERAMIC CHIP 0.0012MF	5%	50V
C217	1-163-003-00	CERAMIC CHIP 330PF	10%	50V
C218	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C219	1-135-099-00	TANTAL. CHIP 2.2MF	10%	6.3V
C220	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C221	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C222	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C223	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C224	1-135-072-21	TANTAL. CHIP 0.22MF	10%	35V
C225	1-135-099-00	TANTAL. CHIP 2.2MF	10%	6.3V
C226	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C227	1-135-100-21	TANTAL. CHIP 6.8MF	10%	6.3V
C229	1-135-096-21	TANTAL. CHIP 4.7MF	10%	10V
C230	1-163-031-00	CERAMIC CHIP 0.01MF		50V
C231	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V
C232	1-135-100-21	TANTAL. CHIP 6.8MF	10%	6.3V
C233	1-163-129-00	CERAMIC CHIP 330PF	5%	50V
C234	1-163-129-00	CERAMIC CHIP 330PF	5%	50V
C235	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C236	1-163-227-00	CERAMIC CHIP 10PF	5%	50V
C237	1-163-108-00	CERAMIC CHIP 43PF	5%	50V
C238	1-163-238-00	CERAMIC CHIP 30PF	5%	50V
C240	1-163-257-00	CERAMIC CHIP 180PF	5%	50V
C241	1-163-010-00	CERAMIC CHIP 0.0012MF	10%	50V
C242	1-163-031-00	CERAMIC CHIP 0.01MF		50V
C243	1-163-003-00	CERAMIC CHIP 330PF	10%	50V
C246	1-135-073-00	TANTAL. CHIP 0.33MF	10%	35V
C247	1-135-070-00	TANTAL. CHIP 0.1MF	10%	35V
C248	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C249	1-135-100-21	TANTAL. CHIP 6.8MF	10%	6.3V
C250	1-163-252-91	CERAMIC CHIP 110PF	5%	50V

When indicating parts by reference number, please include the board name.

Ref No.	Part No.	Description		Remark
C251	1-163-031-00	CERAMIC CHIP 0.01MF		50V
C252	1-163-031-00	CERAMIC CHIP 0.01MF		50V
C253	1-163-335-11	CERAMIC CHIP 0.001MF	5%	50V
C254	1-163-031-00	CERAMIC CHIP 0.01MF		50V
C255	1-163-227-00	CERAMIC CHIP 10PF	5%	50V
C256	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C257	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C259	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C260	1-135-099-00	TANTAL. CHIP 2.2MF	10%	6.3V
C261	1-135-103-00	TANTAL. CHIP 3.3MF	10%	4V
C262	1-163-019-00	CERAMIC CHIP 0.0068MF	10%	50V
C263	1-163-145-00	CERAMIC CHIP 0.0015MF	10%	50V
C264	1-163-031-00	CERAMIC CHIP 0.01MF		50V
C265	1-163-113-00	CERAMIC CHIP 68PF	5%	50V
C266	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C267	1-163-129-00	CERAMIC CHIP 330PF	5%	50V
C268	1-163-105-00	CERAMIC CHIP 33PF	5%	50V
C269	1-163-145-00	CERAMIC CHIP 0.0015MF	5%	50V
C270	1-163-235-00	CERAMIC CHIP 22PF	5%	50V
C271	1-163-111-00	CERAMIC CHIP 56PF	5%	50V
C272	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C273	1-163-133-00	CERAMIC CHIP 470PF	5%	50V
C274	1-163-115-00	CERAMIC CHIP 82PF	5%	50V
C275	1-163-115-00	CERAMIC CHIP 82PF	5%	50V
C276	1-135-100-21	TANTAL. CHIP 6.8MF	10%	6.3V
C277	1-163-031-00	CERAMIC CHIP 0.01MF		50V
C278	1-124-233-00	ELECT 10MF	20%	16V
C279	1-124-222-00	ELECT 22MF	20%	6.3V
C280	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C281	1-124-222-00	ELECT 22MF	20%	6.3V
C283	1-135-100-21	TANTAL. CHIP 6.8MF	10%	6.3V
C284	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C285	1-124-499-11	ELECT 1MF	20%	50V
C286	1-163-075-00	CERAMIC CHIP 0.047MF	10%	25V
C287	1-163-031-00	CERAMIC CHIP 0.01MF		50V
C288	1-135-100-21	TANTAL. CHIP 6.8MF	10%	6.3V
C289	1-163-031-00	CERAMIC CHIP 0.01MF		50V
C290	1-163-115-00	CERAMIC CHIP 82PF	5%	50V
C291	1-124-587-11	ELECT 220MF	20%	6.3V
C292	1-163-031-00	CERAMIC CHIP 0.01MF		50V
C293	1-135-100-21	TANTAL. CHIP 6.8MF	10%	6.3V
C294	1-163-031-00	CERAMIC CHIP 0.01MF		50V
C295	1-163-031-00	CERAMIC CHIP 0.01MF		50V
C296	1-124-233-00	ELECT 10MF	20%	16V
C297	1-163-003-00	CERAMIC CHIP 330PF	10%	50V
C299	1-163-121-00	CERAMIC CHIP 150PF	5%	50V
C301	1-163-105-00	CERAMIC CHIP 33PF	5%	50V
C303	1-135-091-00	TANTAL. CHIP 1MF	10%	16V
C309	1-163-243-00	CERAMIC CHIP 47PF	5%	50V
C311	1-102-508-00	CERAMIC 10PF	5%	50V

CONNECTOR

Ref No.	Part No.	Description	Remark
CN001	1-564-610-21	CONNECTOR, BOARD TO BOARD	
CN002	1-564-610-21	CONNECTOR, BOARD TO BOARD	
CN003	1-564-610-21	CONNECTOR, BOARD TO BOARD	
CN004	1-564-610-21	CONNECTOR, BOARD TO BOARD	
CN101	*1-564-005-00	PIN, CONNECTOR 6P	
CN102	*1-564-001-11	PIN, CONNECTOR 2P	
CN103	*1-564-002-00	PIN, CONNECTOR 3P	
CN104	1-562-582-11	SOCKET, CONNECTOR 24P	
CN109	*1-564-013-00	PIN, CONNECTOR 3P	
CN110	1-557-554-11	CABLE, FLAT (26 CORE)	

TRIMMER

Ref No.	Part No.	Description	Remark
CV101	1-141-227-00	CAP, CERAMIC TRIMMER 20PF	

DIODE

Ref No.	Part No.	Description	Remark
D103	8-719-100-05	DIODE 1S2837	
D104	8-719-100-05	DIODE 1S2837	
D105	8-719-100-05	DIODE 1S2837	
D106	8-719-101-23	DIODE 1SS123	
D107	8-719-101-23	DIODE 1SS123	
D109	8-719-101-23	DIODE 1SS123	
D110	8-719-101-23	DIODE 1SS123	

DELAY LINE

Ref No.	Part No.	Description	Remark
DL101	1-415-385-11	DELAY LINE, 2H (4.43MHZ)	
DL102	1-415-386-11	DELAY LINE, 1H (13.3MHZ)	

FILTER

Ref No.	Part No.	Description	Remark
FL102	1-409-394-12	TRAP, CHROMA EMPHASIS	
FL103	1-235-438-11	BPF, REC C	
FL104	1-235-437-11	BPF, PB C	
FL105	1-235-511-11	FILTER, BAND PASS (3.7MHZ)(BPF)	
FL106	1-235-512-11	FILTER, BAND PASS(5.17MHZ)(BPF)	
FL107	1-235-436-11	FILTER, BAND PASS (16KHZ)	
FL108	1-235-435-11	FILTER, BAND PASS (45KHZ)	

IC

Ref No.	Part No.	Description	Remark
IC101	8-752-003-00	IC CX20030	
IC102	8-752-003-10	IC CX20031	
IC103	8-752-202-10	IC CX22021	
IC104	8-752-003-20	IC CX20032	
IC105	8-759-914-56	IC CX23054	
IC106	8-752-202-20	IC CX22022	
IC107	8-757-991-00	IC CX7991	
IC108	8-759-202-67	IC CX20117	

COIL

Ref No.	Part No.	Description	Remark
L101	1-408-795-21	INDUCTOR CHIP 330UH	
L110	1-408-777-00	INDUCTOR CHIP 10UH	
L111	1-408-781-00	INDUCTOR CHIP 22UH	
L119	1-408-765-21	INDUCTOR CHIP 1UH	
L120	1-408-765-21	INDUCTOR CHIP 1UH	
L121	1-408-792-00	INDUCTOR CHIP 180UH	
L122	1-408-789-21	INDUCTOR CHIP 100UH	

When indicating parts by reference number, please include the board name.

VI-7

Ref No.	Part No.	Description	Remark
L123	1-408-781-00	INDUCTOR CHIP 22UH	
L124	1-408-790-00	INDUCTOR CHIP 120UH	
L125	1-410-167-41	INDUCTOR CHIP 820UH	
L126	1-408-790-00	INDUCTOR CHIP 120UH	
L127	1-408-781-00	INDUCTOR CHIP 22UH	
L129	⚠ 1-408-785-21	INDUCTOR CHIP 47UH	
L130	1-408-776-00	INDUCTOR CHIP 8.2UH	
L131	1-408-795-21	INDUCTOR CHIP 330UH	
L134	1-408-785-21	INDUCTOR CHIP 47UH	
L135	1-408-790-00	INDUCTOR CHIP 120UH	
L136	1-408-777-00	INDUCTOR CHIP 10UH	
L137	1-408-785-21	INDUCTOR CHIP 47UH	
L138	1-408-791-00	INDUCTOR CHIP 150UH	
L143	1-408-982-00	INDUCTOR 100UH	

VARIABLE COIL

Ref No.	Part No.	Description	Remark
LV102	1-459-546-11	COIL, VARIABLE 150UH	
LV103	1-404-594-11	COIL, VARIABLE 10UH	

TRANSISTOR

Ref No.	Part No.	Description	Remark
Q101	8-729-312-22	TRANSISTOR 2SA1122	
Q102	8-729-901-03	TRANSISTOR DTC144WK	
Q103	8-729-901-03	TRANSISTOR DTC144WK	
Q104	8-729-901-03	TRANSISTOR DTC144WK	
Q108	8-729-100-66	TRANSISTOR 2SC1623	
Q109	8-729-901-03	TRANSISTOR DTC144WK	
Q113	8-729-901-03	TRANSISTOR DTC144WK	
Q114	8-729-900-99	TRANSISTOR DTA144WK	
Q115	8-729-116-06	TRANSISTOR 2SK160-K6	
Q116	8-729-900-99	TRANSISTOR DTA144WK	
Q117	8-729-100-66	TRANSISTOR 2SC1623	
Q118	8-729-100-66	TRANSISTOR 2SC1623	
Q119	8-729-312-22	TRANSISTOR 2SA1122	
Q120	8-729-100-66	TRANSISTOR 2SC1623	
Q121	8-729-312-22	TRANSISTOR 2SA1122	
Q122	8-729-901-03	TRANSISTOR DTC144WK	
Q123	8-729-900-61	TRANSISTOR DTA114ES	
Q124	8-729-312-22	TRANSISTOR 2SA1122	
Q125	8-729-100-66	TRANSISTOR 2SC1623	
Q126	8-729-312-22	TRANSISTOR 2SA1122	
Q127	8-729-100-66	TRANSISTOR 2SC1623	
Q128	8-729-312-22	TRANSISTOR 2SA1122	
Q130	8-729-901-03	TRANSISTOR DTC144WK	

RESISTOR

Ref No.	Part No.	Description				Remark
R101	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R102	1-216-043-00	METAL CHIP	560	5%	1/10W	
R103	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R104	1-216-043-00	METAL CHIP	560	5%	1/10W	
R105	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R106	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R107	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R108	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R109	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R110	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R111	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R112	1-216-041-00	METAL CHIP	470	5%	1/10W	
R113	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R114	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R115	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R116	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R117	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R118	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R119	1-216-127-00	METAL CHIP	1.8M	5%	1/10W	
R120	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R121	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R122	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R123	1-247-831-00	CARBON	1K	5%	1/6W	
R124	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R125	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R126	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R127	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R128	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R129	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R130	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R145	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R146	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R147	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R148	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R149	1-216-043-00	METAL CHIP	560	5%	1/10W	
R150	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R151	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R153	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R155	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R157	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R158	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R159	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R160	1-216-027-00	METAL CHIP	120	5%	1/10W	
R161	1-216-035-00	METAL CHIP	270	5%	1/10W	
R162	1-216-039-00	METAL CHIP	390	5%	1/10W	
R163	1-216-039-00	METAL CHIP	390	5%	1/10W	
R164	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R165	1-216-041-00	METAL CHIP	470	5%	1/10W	
R175	1-216-041-00	METAL CHIP	470	5%	1/10W	
R181	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R182	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R183	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R184	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R185	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R186	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R187	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R188	1-216-025-00	METAL CHIP	100	5%	1/10W	
R189	1-216-009-00	METAL CHIP	22	5%	1/10W	
R190	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R191	1-216-027-00	METAL CHIP	120	5%	1/10W	
R192	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R193	1-216-121-00	METAL CHIP	1M	5%	1/10W	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref No.	Part No.	Description				Remark
R194	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R195	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R196	1-216-087-00	METAL CHIP	39K	5%	1/10W	
R197	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R198	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R199	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R200	1-216-045-00	METAL CHIP	680	5%	1/10W	
R201	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R202	1-216-037-00	METAL CHIP	330	5%	1/10W	
R203	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R204	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R205	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R206	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R207	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R208	1-216-117-00	METAL CHIP	680K	5%	1/10W	
R209	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R211	1-216-115-00	METAL CHIP	560K	5%	1/10W	
R212	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R213	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R214	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R215	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R216	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R217	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R218	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R219	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R220	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R221	1-216-039-00	METAL CHIP	390	5%	1/10W	
R222	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R225	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R226	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R227	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R228	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R229	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R230	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R231	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R232	1-216-043-00	METAL CHIP	560	5%	1/10W	
R233	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R234	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R235	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R237	1-216-045-00	METAL CHIP	680	5%	1/10W	
R238	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R239	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R240	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R241	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R242	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R243	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R244	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R245	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R246	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R247	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R248	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R249	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R250	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R251	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	

Ref No.	Part No.	Description				Remark
R252	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R253	1-216-103-00	METAL CHIP	180K	5%	1/10W	
R254	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R255	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R256	1-216-041-00	METAL CHIP	470	5%	1/10W	
R257	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R258	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R259	1-216-043-00	METAL CHIP	560	5%	1/10W	
R260	1-216-095-00	METAL CHIP	82K	5%	1/10W	
R261	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R262	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R263	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R264	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R265	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R266	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R268	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R269	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R270	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R271	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R272	1-216-115-00	METAL CHIP	560K	5%	1/10W	
R273	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R274	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R275	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R276	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R277	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R278	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R279	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R280	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R281	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R282	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R283	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R284	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R285	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R287	1-216-021-00	METAL CHIP	68	5%	1/10W	
R289	1-216-015-00	METAL CHIP	39	5%	1/10W	
R290	1-216-015-00	METAL CHIP	39	5%	1/10W	
R291	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R292	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R293	1-216-117-00	METAL CHIP	680K	5%	1/10W	
R294	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R295	1-216-117-00	METAL CHIP	680K	5%	1/10W	
R296	⚠1-216-025-91	METAL CHIP	100	5%	1/10W	
R297	⚠1-216-025-91	METAL CHIP	100	5%	1/10W	
R298	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R299	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R300	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R301	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R302	1-216-039-00	METAL CHIP	390	5%	1/10W	
R304	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R305	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R306	1-216-025-00	METAL CHIP	100	5%	1/10W	
R307	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R308	⚠1-216-049-91	METAL CHIP	1K	5%	1/10W	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref No.	Part No.	Description	Remark
R309	⚠1-216-049-91	METAL CHIP 1K 5% 1/10W	
R310	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R311	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R312	1-216-295-00	METAL CHIP 0 5% 1/10W	
R314	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R315	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R316	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R319	1-216-039-00	METAL CHIP 390 5% 1/10W	
R320	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R323	1-216-033-00	METAL CHIP 220 5% 1/10W	
R336	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R337	1-216-099-00	METAL CHIP 120K 5% 1/10W	
R341	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R342	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R343	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R344	1-247-895-00	CARBON 470K 5% 1/6W	

VARIABLE RESISTOR

Ref No.	Part No.	Description	Remark
RV101	1-228-825-21	RES, ADJ, METAL GLAZE 470	
RV102	1-228-830-21	RES, ADJ, METAL GLAZE 22K	
RV103	1-228-829-21	RES, ADJ, METAL GLAZE 10K	
RV104	1-228-829-21	RES, ADJ, METAL GLAZE 10K	
RV105	1-228-830-21	RES, ADJ, METAL GLAZE 22K	
RV106	1-228-830-21	RES, ADJ, METAL GLAZE 22K	
RV107	1-228-830-21	RES, ADJ, METAL GLAZE 22K	
RV108	1-228-830-21	RES, ADJ, METAL GLAZE 22K	
RV109	1-228-830-21	RES, ADJ, METAL GLAZE 22K	
RV110	1-228-829-21	RES, ADJ, METAL GLAZE 10K	
RV111	1-228-830-21	RES, ADJ, METAL GLAZE 22K	
RV112	1-228-834-11	RES, ADJ, METAL GLAZE 220K	
RV113	1-228-832-21	RES, ADJ, METAL GLAZE 47K	

CRYSTAL

Ref No.	Part No.	Description	Remark
X101	1-527-345-00	CRYSTAL, OSCILLATOR 4.43MHz	
X102	1-567-345-21	VIBRATOR, CRYSTAL 5.86MHz	
X103	1-567-347-11	OSCILLATOR, CERAMIC 13.3MHz	

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*A-7070-074-A EX-1 BOARD, COMPLETE
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CAPACITOR

Ref No.	Part No.	Description	Remark
C361	1-135-100-21	TANTAL. CHIP 6.8MF 20% 6.3V	
C362	1-163-222-00	CERAMIC CHIP 5PF 0.25PF 50V	
C363	1-163-234-00	CERAMIC CHIP 20PF 5% 50V	
C364	1-163-235-00	CERAMIC CHIP 22PF 5% 50V	
C365	1-163-219-00	CERAMIC CHIP 2PF 0.25PF 50V	
C366	1-163-227-00	CERAMIC CHIP 10PF 5% 50V	
C367	1-163-121-00	CERAMIC CHIP 150PF 5% 50V	
C368	1-163-243-00	CERAMIC CHIP 47PF 5% 50V	
C369	1-163-229-00	CERAMIC CHIP 12PF 5% 50V	
C370	1-135-096-21	TANTAL. CHIP 4.7MF 20% 10V	
C371	1-163-035-00	CERAMIC CHIP 0.047MF 50V	
C372	1-163-119-00	CERAMIC CHIP 120PF 5% 50V	
C373	1-163-241-00	CERAMIC CHIP 39PF 5% 50V	
C374	1-163-112-00	CERAMIC CHIP 62PF 5% 50V	
C375	1-163-235-00	CERAMIC CHIP 22PF 5% 50V	
C376	1-163-114-00	CERAMIC CHIP 75PF 5% 50V	
C377	1-135-096-21	TANTAL. CHIP 4.7MF 20% 10V	
C378	1-163-121-00	CERAMIC CHIP 150PF 5% 50V	
C379	1-163-113-00	CERAMIC CHIP 68PF 5% 50V	
C380	1-163-243-00	CERAMIC CHIP 47PF 5% 50V	
C381	1-135-100-21	TANTAL. CHIP 6.8MF 20% 6.3V	
C382	1-163-227-00	CERAMIC CHIP 10PF 5% 50V	
C383	1-135-100-21	TANTAL. CHIP 6.8MF 20% 6.3V	
C384	1-163-119-00	CERAMIC CHIP 120PF 5% 50V	
C385	1-163-017-00	CERAMIC CHIP 0.0047MF 10% 50V	
C386	1-163-033-00	CERAMIC CHIP 0.022MF 10% 25V	

DIODE

Ref No.	Part No.	Description	Remark
D361	8-719-101-23	DIODE 1SS123	
D362	8-719-101-23	DIODE 1SS123	

COIL

Ref No.	Part No.	Description	Remark
L361	1-410-219-41	INDUCTOR CHIP 180UH	
L362	1-410-220-41	INDUCTOR CHIP 220UH	
L363	1-410-220-41	INDUCTOR CHIP 220UH	
L364	1-410-214-41	INDUCTOR CHIP 68UH	
L365	1-410-216-41	INDUCTOR CHIP 100UH	
L366	1-410-212-41	INDUCTOR CHIP 47UH	
L367	1-410-213-11	INDUCTOR CHIP 56UH	
L368	1-410-214-41	INDUCTOR CHIP 68UH	
L369	1-410-216-41	INDUCTOR CHIP 100UH	
L370	1-410-213-11	INDUCTOR CHIP 56UH	
L371	1-410-215-41	INDUCTOR CHIP 82UH	
L372	1-410-213-11	INDUCTOR CHIP 56UH	
L373	1-410-213-11	INDUCTOR CHIP 56UH	
L374	1-410-192-11	INDUCTOR CHIP 1UH	

TRANSISTOR

Ref No.	Part No.	Description	Remark
Q361	8-729-312-22	TRANSISTOR 2SA1122	
Q362	8-729-312-22	TRANSISTOR 2SA1122	
Q363	8-729-100-66	TRANSISTOR 2SC1623	
Q364	8-729-100-66	TRANSISTOR 2SC1623	
Q365	8-729-312-22	TRANSISTOR 2SA1122	
Q366	8-729-100-66	TRANSISTOR 2SC1623	
Q367	8-729-100-66	TRANSISTOR 2SC1623	
Q368	8-729-312-22	TRANSISTOR 2SA1122	

RESISTOR

Ref No.	Part No.	Description	Remark
R361	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R362	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R363	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R364	1-216-039-00	METAL CHIP 390 5% 1/10W	
R365	1-216-039-00	METAL CHIP 390 5% 1/10W	
R366	1-216-039-00	METAL CHIP 390 5% 1/10W	
R367	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R368	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref No.	Part No.	Description				Remark
R369	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R370	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R371	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R372	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R373	1-216-043-00	METAL CHIP	560	5%	1/10W	
R374	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R375	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R376	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R377	1-216-045-00	METAL CHIP	680	5%	1/10W	
R378	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R379	1-216-045-00	METAL CHIP	680	5%	1/10W	
R380	1-216-045-00	METAL CHIP	680	5%	1/10W	
R381	1-216-045-00	METAL CHIP	680	5%	1/10W	
R382	1-216-047-00	METAL CHIP	820	5%	1/10W	
R383	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R384	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R385	1-216-045-00	METAL CHIP	680	5%	1/10W	
R386	1-216-045-00	METAL CHIP	680	5%	1/10W	
R387	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R388	1-216-025-00	METAL CHIP	100	5%	1/10W	
R389	1-216-035-00	METAL CHIP	270	5%	1/10W	
R390	1-216-041-00	METAL CHIP	470	5%	1/10W	
R391	1-216-001-00	METAL CHIP	10	5%	1/10W	
R392	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R393	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R394	1-247-823-00	CARBON	470	5%	1/6W	

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*A-7060-047-A AR-2 BOARD, COMPLETE
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*3-686-957-01 CASE (MAIN), SHIELD, AR

CAPACITOR

Ref No.	Part No.	Description				Remark
C101	1-163-077-00	CERAMIC CHIP	0.1MF		50V	
C102	1-124-224-00	ELECT	47MF	20%	6.3V	
C103	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C104	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C105	1-163-075-00	CERAMIC CHIP	0.047MF	10%	25V	
C106	1-131-347-00	TANTALUM	1MF	10%	35V	
C107	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C108	1-163-075-00	CERAMIC CHIP	0.047MF	10%	25V	
C109	1-163-075-00	CERAMIC CHIP	0.047MF	10%	25V	
C110	1-124-225-00	ELECT	100MF	20%	6.3V	
C111	1-163-077-00	CERAMIC CHIP	0.1MF		50V	
C112	1-124-225-00	ELECT	100MF	20%	6.3V	
C113	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C114	1-131-347-00	TANTALUM	1MF	10%	35V	
C115	1-163-075-00	CERAMIC CHIP	0.047MF	10%	25V	
C116	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C117	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C118	1-163-075-00	CERAMIC CHIP	0.047MF	10%	25V	
C119	1-124-255-00	ELECT	1MF	20%	50V	
C120	1-163-237-00	CERAMIC CHIP	27PF	5%	50V	
C122	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C123	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C124	1-124-222-00	ELECT	22MF	20%	6.3V	
C125	1-163-105-00	CERAMIC CHIP	33PF	5%	50V	
C126	1-163-115-00	CERAMIC CHIP	82PF	5%	50V	
C128	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C129	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C130	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C131	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C132	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C133	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C134	1-163-075-00	CERAMIC CHIP	0.047MF	10%	25V	
C135	1-163-075-00	CERAMIC CHIP	0.047MF	10%	25V	
C136	1-163-075-00	CERAMIC CHIP	0.047MF	10%	25V	
C138	1-163-237-00	CERAMIC CHIP	27PF	5%	50V	
C139	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C140	1-163-075-00	CERAMIC CHIP	0.047MF	10%	25V	
C141	1-163-127-00	CERAMIC CHIP	270PF	5%	50V	
C142	1-163-033-00	CERAMIC CHIP	0.022MF	10%	25V	
C143	1-163-033-00	CERAMIC CHIP	0.022MF	10%	25V	
C144	1-163-075-00	CERAMIC CHIP	0.047MF	10%	25V	
C145	1-124-233-00	ELECT	10MF	20%	16V	
C146	1-163-107-00	CERAMIC CHIP	39PF	5%	50V	
C147	1-163-129-00	CERAMIC CHIP	330PF	5%	50V	
C148	1-163-075-00	CERAMIC CHIP	0.047MF	10%	25V	
C149	1-163-075-00	CERAMIC CHIP	0.047MF	10%	25V	
C401	1-163-019-00	CERAMIC CHIP	0.0068MF	10%	50V	
C402	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C403	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C404	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C405	1-163-033-00	CERAMIC CHIP	0.022MF	10%	25V	
C406	1-163-257-00	CERAMIC CHIP	180PF	5%	50V	
C407	1-163-081-00	CERAMIC CHIP	0.22MF		50V	
C408	1-163-145-00	CERAMIC CHIP	0.0015MF	5%	50V	
C409	1-163-257-00	CERAMIC CHIP	180PF	5%	50V	
C410	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V	
C411	1-163-014-00	CERAMIC CHIP	0.0027MF	10%	50V	
C412	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C413	1-163-077-00	CERAMIC CHIP	0.1MF		50V	
C414	1-124-225-00	ELECT	100MF	20%	6.3V	
C416	1-124-225-00	ELECT	100MF	20%	6.3V	
C417	1-124-224-00	ELECT	47MF	20%	6.3V	
C418	1-163-133-00	CERAMIC CHIP	470PF	5%	50V	
C419	1-124-225-00	ELECT	100MF	20%	6.3V	
C420	1-124-233-00	ELECT	10MF	20%	16V	
C421	1-163-088-00	CERAMIC CHIP	5PF	0.25PF	50V	
C422	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V	
C423	1-163-125-00	CERAMIC CHIP	220PF	5%	50V	
C424	1-163-079-00	CERAMIC CHIP	0.039MF	10%	25V	
C425	1-163-137-00	CERAMIC CHIP	680PF	5%	50V	
C426	1-163-020-00	CERAMIC CHIP	0.0082MF	10%	50V	
C427	1-124-255-00	ELECT	1MF	20%	50V	
C428	1-124-233-00	ELECT	10MF	20%	16V	

When indicating parts by reference number, please include the board name.

AR-2

Ref No.	Part No.	Description	Remark
C429	1-124-233-00	ELECT 10MF 20%	16V
C430	1-123-618-00	ELECT 22MF 20%	6.3V
C431	1-123-612-00	ELECT 2.2MF 20%	50V
C432	1-124-253-00	ELECT 0.47MF 20%	50V
C433	1-123-661-00	ELECT 100MF 20%	6.3V
C434	1-163-141-00	CERAMIC CHIP 0.001MF 10%	50V
C435	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C436	1-123-661-00	ELECT 100MF 20%	6.3V
C437	1-123-610-00	ELECT 0.47MF 20%	50V
C438	1-163-257-00	CERAMIC CHIP 180PF 5%	50V
C439	1-163-014-00	CERAMIC CHIP 0.0027MF 10%	50V
C441	1-124-233-00	ELECT 10MF 20%	16V
C442	1-163-117-00	CERAMIC CHIP 100PF 5%	50V
C443	1-163-077-00	CERAMIC CHIP 0.1MF	50V
C444	1-163-133-00	CERAMIC CHIP 470PF 5%	50V
C445	1-163-103-00	CERAMIC CHIP 27PF 5%	50V
C446	1-124-233-00	ELECT 10MF 20%	16V
		CONNECTOR	
CN007	1-564-098-21	CONNECTOR, BOARD TO BOARD	
CN008	1-564-098-21	CONNECTOR, BOARD TO BOARD	
CN009	1-564-098-21	CONNECTOR, BOARD TO BOARD	
CN111	*1-564-016-00	PIN, CONNECTOR 6P	
CN112	*1-564-003-00	PIN, CONNECTOR 4P	
CN113	*1-564-014-00	PIN, CONNECTOR 4P	
CN114	*1-564-012-00	PIN, CONNECTOR 2P	
		DIODE	
D101	8-719-101-23	DIODE 1SS123	
		FILTER	
FL401	1-235-398-11	BPF 1.5MHZ	
		IC	
IC101	8-752-003-40	IC CX20034	
IC401	8-752-003-73	IC CX20037-2	
		COIL	
L101	1-408-970-21	MICRO INDUCTOR 10UH	
L102	1-408-984-21	MICRO INDUCTOR 150UH	
L103	1-408-974-21	MICRO INDUCTOR 22UH	
L104	1-408-974-21	MICRO INDUCTOR 22UH	
L105	1-408-974-21	MICRO INDUCTOR 22UH	
L106	1-408-966-21	MICRO INDUCTOR 4.7UH	
L107	1-408-989-21	MICRO INDUCTOR 470UH	
L108	1-408-974-21	MICRO INDUCTOR 22UH	
L109	1-408-985-21	MICRO INDUCTOR 180UH	
L111	1-408-973-21	MICRO INDUCTOR 18UH	
L401	1-408-948-00	MICRO INDUCTOR 220UH	
		VARIABLE COIL	
LV101	1-459-548-11	COIL, VARIABLE 330UH	

Ref No.	Part No.	Description	Remark
		TRANSISTOR	
Q101	8-729-100-66	TRANSISTOR 2SC1623	
Q102	8-729-901-03	TRANSISTOR DTC144WK	
Q103	8-729-901-03	TRANSISTOR DTC144WK	
Q104	8-729-271-23	TRANSISTOR 2SC2712	
Q105	8-729-100-66	TRANSISTOR 2SC1623	
Q106	8-729-100-66	TRANSISTOR 2SC1623	
Q401	8-729-100-66	TRANSISTOR 2SC1623	
Q404	8-729-100-66	TRANSISTOR 2SC1623	
Q405	8-729-901-03	TRANSISTOR DTC144WK	
Q406	8-729-901-03	TRANSISTOR DTC144WK	
Q407	8-729-100-66	TRANSISTOR 2SC1623	
Q408	8-729-100-76	TRANSISTOR 2SA812	
		RESISTOR	
R101	1-216-089-00	METAL CHIP 47K 5%	1/10W
R102	1-216-083-00	METAL CHIP 27K 5%	1/10W
R103	1-216-081-00	METAL CHIP 22K 5%	1/10W
R104	1-216-055-00	METAL CHIP 1.8K 5%	1/10W
R105	1-216-083-00	METAL CHIP 27K 5%	1/10W
R106	1-216-083-00	METAL CHIP 27K 5%	1/10W
R107	1-216-083-00	METAL CHIP 27K 5%	1/10W
R108	1-216-083-00	METAL CHIP 27K 5%	1/10W
R109	1-216-089-00	METAL CHIP 47K 5%	1/10W
R110	1-216-083-00	METAL CHIP 27K 5%	1/10W
R111	1-216-081-00	METAL CHIP 22K 5%	1/10W
R112	1-216-055-00	METAL CHIP 1.8K 5%	1/10W
R113	1-216-081-00	METAL CHIP 22K 5%	1/10W
R114	1-216-081-00	METAL CHIP 22K 5%	1/10W
R115	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R116	1-216-043-00	METAL CHIP 560 5%	1/10W
R117	1-216-053-00	METAL CHIP 1.5K 5%	1/10W
R118	1-216-097-00	METAL CHIP 100K 5%	1/10W
R119	1-216-059-00	METAL CHIP 2.7K 5%	1/10W
R120	1-216-049-00	METAL CHIP 1K 5%	1/10W
R121	1-216-085-00	METAL CHIP 33K 5%	1/10W
R122	1-216-073-00	METAL CHIP 10K 5%	1/10W
R123	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
R124	1-216-055-00	METAL CHIP 1.8K 5%	1/10W
R125	1-216-055-00	METAL CHIP 1.8K 5%	1/10W
R126	1-216-053-00	METAL CHIP 1.5K 5%	1/10W
R127	1-216-081-00	METAL CHIP 22K 5%	1/10W
R128	1-216-081-00	METAL CHIP 22K 5%	1/10W
R129	1-216-081-00	METAL CHIP 22K 5%	1/10W
R130	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R131	1-216-105-00	METAL CHIP 220K 5%	1/10W
R132	1-216-045-00	METAL CHIP 680 5%	1/10W
R133	1-216-043-00	METAL CHIP 560 5%	1/10W
R134	1-216-081-00	METAL CHIP 22K 5%	1/10W
R135	1-216-075-00	METAL CHIP 12K 5%	1/10W
R136	1-216-041-00	METAL CHIP 470 5%	1/10W
R137	1-216-051-00	METAL CHIP 1.2K 5%	1/10W

When indicating parts by reference number, please include the board name.

Ref No.	Part No.	Description				Remark
R138	1-216-047-00	METAL CHIP	820	5%	1/10W	
R139	1-216-023-00	METAL CHIP	82	5%	1/10W	
R140	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R141	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R142	1-216-037-00	METAL CHIP	330	5%	1/10W	
R143	1-216-025-00	METAL CHIP	100	5%	1/10W	
R144	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R145	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R401	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R402	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R403	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R404	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R405	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R406	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R407	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R410	1-216-047-00	METAL CHIP	820	5%	1/10W	
R411	1-216-047-00	METAL CHIP	820	5%	1/10W	
R413	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R414	1-216-001-00	METAL CHIP	10	5%	1/10W	
R415	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R416	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R417	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R418	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R419	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R420	1-216-045-00	METAL CHIP	680	5%	1/10W	
R421	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R422	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R423	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R424	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R425	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R426	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R427	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R428	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R429	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R430	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R431	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R432	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R434	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R435	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R437	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R438	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R439	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R440	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R441	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R442	1-216-041-00	METAL CHIP	470	5%	1/10W	
R443	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R444	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R445	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R446	1-216-023-00	METAL CHIP	82	5%	1/10W	
R447	1-216-043-00	METAL CHIP	560	5%	1/10W	
R448	1-216-037-00	METAL CHIP	330	5%	1/10W	
R449	1-216-041-00	METAL CHIP	470	5%	1/10W	
R450	1-216-295-00	METAL CHIP	0	5%	1/10W	

VARIABLE RESISTOR

Ref No.	Part No.	Description	Remark
RV101	1-230-523-11	RES, ADJ, METAL GLAZE 10K	
RV102	1-230-522-11	RES, ADJ, METAL GLAZE 4.7K	
RV103	1-230-524-11	RES, ADJ, METAL GLAZE 22K	
RV104	1-230-522-11	RES, ADJ, METAL GLAZE 4.7K	
RV105	1-230-523-11	RES, ADJ, METAL GLAZE 10K	
RV106	1-230-522-11	RES, ADJ, METAL GLAZE 4.7K	
RV401	1-230-524-11	RES, ADJ, METAL GLAZE 22K	
RV402	1-230-523-11	RES, ADJ, METAL GLAZE 10K	

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*A-7060-048-A SK-4 BOARD, COMPLETE

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*3-686-795-01 SPRING (SK)

*3-686-822-01 HOLDER, LCD

CAPACITOR

Ref No.	Part No.	Description				Remark
C491	1-163-031-00	CERAMIC CHIP	0.01MF		50V	
C601	1-163-125-00	CERAMIC CHIP	220PF	5%	50V	
C602	1-163-125-00	CERAMIC CHIP	220PF	5%	50V	
C603	1-163-077-00	CERAMIC CHIP	0.1MF		50V	
C604	1-163-031-00	CERAMIC CHIP	0.01MF		50V	
C605	1-163-031-00	CERAMIC CHIP	0.01MF		50V	
C606	1-163-033-00	CERAMIC CHIP	0.022MF		50V	
C607	1-163-033-00	CERAMIC CHIP	0.022MF		50V	
C608	1-163-033-00	CERAMIC CHIP	0.022MF		50V	
C609	1-123-617-00	ELECT	10MF	20%	16V	
C610	1-163-035-00	CERAMIC CHIP	0.047MF		50V	
C611	1-123-617-00	ELECT	10MF	20%	16V	
C612	1-163-081-00	CERAMIC CHIP	0.22MF		25V	
C613	1-163-031-00	CERAMIC CHIP	0.01MF		50V	
C615	1-163-081-00	CERAMIC CHIP	0.22MF		25V	
C616	1-163-081-00	CERAMIC CHIP	0.22MF		25V	
C617	1-163-031-00	CERAMIC CHIP	0.01MF		50V	
C618	1-163-031-00	CERAMIC CHIP	0.01MF		50V	

CONNECTOR

Ref No.	Part No.	Description	Remark
CN605	1-562-589-11	SOCKET, DIN (SMALL TYPE) 5P	

DIODE

Ref No.	Part No.	Description	Remark
D601	8-719-100-05	DIODE 1S2837	
D602	8-719-100-05	DIODE 1S2837	
D603	8-719-100-05	DIODE 1S2837	
D604	8-719-100-05	DIODE 1S2837	
D605	8-719-100-05	DIODE 1S2837	
D606	8-719-100-05	DIODE 1S2837	
D607	8-719-100-05	DIODE 1S2837	
D608	8-719-100-03	DIODE 1S2835	
D609	8-719-100-05	DIODE 1S2837	
D610	8-719-100-05	DIODE 1S2837	
D611	8-719-100-05	DIODE 1S2837	
D612	8-719-100-05	DIODE 1S2837	

When indicating parts by reference number, please include the board name.

SK-4

Ref No.	Part No.	Description	Remark
D613	8-719-100-03	DIODE 1S2835	
D614	8-719-918-67	DIODE GL-1EG102	
D615	8-719-918-65	DIODE GL-1PR102	
D616	8-719-918-67	DIODE GL-1EG102	
D617	8-719-918-65	DIODE GL-1PR102	
D618	8-719-918-66	DIODE GL-1HY102	
D619	8-719-918-66	DIODE GL-1HY102	
D620	8-719-106-71	DIODE RD12M-B2	
D621	8-719-106-71	DIODE RD12M-B2	
D622	8-719-106-71	DIODE RD12M-B2	
D623	8-719-101-23	DIODE 1SS123	
		IC	
IC601	8-759-104-12	IC UPD7503G-302	
IC602	8-759-200-77	IC TC4028BF	
IC603	8-757-991-00	IC CX7991	
IC604	8-759-100-93	IC UPC393G2	
IC605	8-759-200-82	IC TC4069UBF	
		COIL	
L601	1-408-987-21	MICRO INDUCTOR 330UH	
		DISPLAY PANEL	
ND601	1-806-917-11	DISPLAY PANEL, LIQUID CRYSTAL	
		TRANSISTOR	
Q601	8-729-100-66	TRANSISTOR 2SC1623	
Q602	8-729-100-66	TRANSISTOR 2SC1623	
Q603	8-729-100-66	TRANSISTOR 2SC1623	
Q604	8-729-100-66	TRANSISTOR 2SC1623	
Q605	8-729-100-66	TRANSISTOR 2SC1623	
Q606	8-729-100-66	TRANSISTOR 2SC1623	
Q607	8-729-100-76	TRANSISTOR 2SA812	
Q608	8-729-100-76	TRANSISTOR 2SA812	
Q609	8-729-901-01	TRANSISTOR DTC144EK	
Q610	8-729-901-01	TRANSISTOR DTC144EK	
Q611	8-729-901-01	TRANSISTOR DTC144EK	
Q612	8-729-901-06	TRANSISTOR DTA144EK	
Q613	8-729-100-66	TRANSISTOR 2SC1623	
		RESISTOR	
R601	1-216-109-00	METAL CHIP 330K 5% 1/10W	
R602	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R603	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R604	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R605	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R606	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R607	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R608	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R609	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R610	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R611	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R612	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R613	1-216-097-00	METAL CHIP 100K 5% 1/10W	

Ref No.	Part No.	Description	Remark
R614	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R615	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R616	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R617	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R618	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R619	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R620	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R621	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R622	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R623	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R624	1-216-037-00	METAL CHIP 330 5% 1/10W	
R625	1-216-037-00	METAL CHIP 330 5% 1/10W	
R626	1-216-031-00	METAL CHIP 180 5% 1/10W	
R627	1-216-035-00	METAL CHIP 270 5% 1/10W	
R628	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R629	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R630	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R631	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R632	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R633	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R634	1-216-087-00	METAL CHIP 39K 5% 1/10W	
R635	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R636	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R637	1-216-037-00	METAL CHIP 330 5% 1/10W	
R639	1-216-099-00	METAL CHIP 120K 5% 1/10W	
R640	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R641	1-216-115-00	METAL CHIP 560K 5% 1/10W	
R642	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R643	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R644	1-216-109-00	METAL CHIP 330K 5% 1/10W	
R645	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R646	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R647	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R648	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R649	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R650	1-216-047-00	METAL CHIP 820 5% 1/10W	
R651	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R652	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R653	1-216-117-00	METAL CHIP 680K 5% 1/10W	
R654	1-216-099-00	METAL CHIP 120K 5% 1/10W	
		SWITCH	
S601	1-554-174-00	SWITCH, KEY BOARD	
S602	1-554-174-00	SWITCH, KEY BOARD	
S603	1-554-174-00	SWITCH, KEY BOARD	
S604	1-554-364-00	SWITCH, SLIDE	
S605	1-554-364-00	SWITCH, SLIDE	
S606	1-554-174-00	SWITCH, KEY BOARD	
S607	1-554-174-00	SWITCH, KEY BOARD	
S608	1-554-174-00	SWITCH, KEY BOARD	
S609	1-554-174-00	SWITCH, KEY BOARD	
S610	1-554-174-00	SWITCH, KEY BOARD	
S611	1-554-174-00	SWITCH, KEY BOARD	
S612	1-553-977-00	SWITCH, SLIDE	

When indicating parts by reference number, please include the board name.

CRYSTAL

Ref No.	Part No.	Description				Remark
X601	1-527-532-00	OSCILLATOR, CERAMIC 400KHZ				

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*A-7060-053-A SV-14 BOARD, COMPLETE
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2-279-715-21 RIVET, NYLON

CAPACITOR

Ref No.	Part No.	Description				Remark
C501	1-124-236-00	ELECT	47MF	20%	10V	
C502	1-163-077-00	CERAMIC CHIP	0.1MF		50V	
C503	1-124-577-11	ELECT	82MF	20%	10V	
C504	1-163-077-00	CERAMIC CHIP	0.1MF		50V	
C505	1-124-577-11	ELECT	82MF	20%	10V	
C506	1-124-577-11	ELECT	82MF	20%	10V	
C507	1-124-233-00	ELECT	10MF	20%	16V	
C508	1-124-234-00	ELECT	22MF	20%	16V	
C510	1-124-255-00	ELECT	1MF	20%	50V	
C511	1-124-255-00	ELECT	1MF	20%	50V	
C512	1-124-255-00	ELECT	1MF	20%	50V	
C513	1-124-258-00	ELECT	3.3MF	20%	25V	
C515	1-124-233-00	ELECT	10MF	20%	16V	
C516	1-124-233-00	ELECT	10MF	20%	16V	
C517	1-124-233-00	ELECT	10MF	20%	16V	
C518	1-135-091-00	TANTAL. CHIP	1MF	20%	16V	
C519	1-163-077-00	CERAMIC CHIP	0.1MF		50V	
C521	1-124-231-11	ELECT	4.7MF	20%	16V	
C522	1-163-133-00	CERAMIC CHIP	470PF	5%	50V	
C552	1-124-596-11	ELECT	27MF	20%	16V	
C553	1-124-596-11	ELECT	27MF	20%	16V	
C554	1-124-596-11	ELECT	27MF	20%	16V	
C558	1-124-275-00	ELECT	2.2MF	20%	35V	
C559	1-124-233-00	ELECT	10MF	20%	16V	
C560	1-124-275-00	ELECT	2.2MF	20%	35V	
C562	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C563	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C565	1-163-077-00	CERAMIC CHIP	0.1MF		50V	
C566	1-163-061-00	CERAMIC CHIP	0.015MF	10%	50V	
C567	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V	
C568	1-163-074-00	CERAMIC CHIP	0.033MF	10%	25V	
C569	1-163-077-00	CERAMIC CHIP	0.1MF		50V	
C570	1-163-077-00	CERAMIC CHIP	0.1MF		50V	
C571	1-163-077-00	CERAMIC CHIP	0.1MF		50V	
C572	1-124-287-00	ELECT	10MF	20%	10V	

CONNECTOR

Ref No.	Part No.	Description	Remark
CN509	1-557-555-11	CABLE, FLAT (25 CORE)	
CN510	*1-564-014-00	PIN, CONNECTOR 4P	
CN511	*1-564-021-11	PIN, CONNECTOR 11P	
CN512	*1-564-014-00	PIN, CONNECTOR 4P	

DIODE

Ref No.	Part No.	Description	Remark
D501	8-719-200-35	DIODE E10QS03	
D502	8-719-200-35	DIODE E10QS03	
D504	8-719-200-35	DIODE E10QS03	
D506	8-719-100-03	DIODE 1S2835	

IC

Ref No.	Part No.	Description	Remark
IC501	8-759-202-45	IC CX20114	
IC502	8-752-003-60	IC CX20036	
IC504	8-759-100-94	IC UPC358G2	
IC505	8-759-201-01	IC TC4066BF	

COIL

Ref No.	Part No.	Description	Remark
L501	1-410-125-11	COIL, CHOKE 100UH	
L502	1-410-126-11	COIL, CHOKE 200UH	
L503	1-410-126-11	COIL, CHOKE 200UH	

TRANSISTOR

Ref No.	Part No.	Description	Remark
Q501	8-729-105-29	TRANSISTOR 2SA1385	
Q502	8-729-105-29	TRANSISTOR 2SA1385	
Q503	8-729-100-66	TRANSISTOR 2SC1623	
Q504	8-729-700-08	TRANSISTOR NJL7141E	
Q508	8-729-100-66	TRANSISTOR 2SC1623	
Q509	8-729-100-66	TRANSISTOR 2SC1623	
Q510	8-729-100-76	TRANSISTOR 2SA812	
Q512	8-729-100-66	TRANSISTOR 2SC1623	
Q513	8-729-901-01	TRANSISTOR DTC144EK	
Q514	⚠8-729-100-76	TRANSISTOR 2SA812	
Q515	⚠8-729-901-01	TRANSISTOR DTC144EK	
Q516	8-729-100-76	TRANSISTOR 2SA812	
Q517	8-729-901-06	TRANSISTOR DTA144EK	

RESISTOR

Ref No.	Part No.	Description				Remark
R501	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R502	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R503	1-216-041-00	METAL CHIP	470	5%	1/10W	
R504	1-216-041-00	METAL CHIP	470	5%	1/10W	
R505	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R506	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R507	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R508	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R509	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R510	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R511	1-216-025-00	METAL CHIP	100	5%	1/10W	
R513	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R517	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R518	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R519	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R520	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R524	1-216-295-00	METAL CHIP	0	5%	1/10W	
R551	1-216-041-00	METAL CHIP	470	5%	1/10W	
R552	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R553	1-216-099-00	METAL CHIP	120K	5%	1/10W	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref No.	Part No.	Description				Remark
R554	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R555	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R556	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R557	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R558	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R559	1-214-972-00	METAL	0.22	1%	1/4W	
R563	1-216-304-11	METAL CHIP	3.3	5%	1/10W	
R564	1-216-304-11	METAL CHIP	3.3	5%	1/10W	
R565	1-216-304-11	METAL CHIP	3.3	5%	1/10W	
R566	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R568	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R569	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R570	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R571	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R572	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R573	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R574	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R575	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R576	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R578	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R581	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R582	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R583	1-216-107-00	METAL CHIP	270K	5%	1/10W	
R584	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R585	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R587	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R588	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R589	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R590	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R591	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R592	⚠1-216-049-91	METAL CHIP	1K	5%	1/10W	
R593	⚠1-216-025-91	METAL CHIP	100	5%	1/10W	
R595	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R596	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R597	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R598	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R599	1-216-295-00	METAL CHIP	0	5%	1/10W	

VARIABLE RESISTOR

RV501	1-230-529-11	RES, ADJ, METAL GLAZE 470K
RV502	1-230-528-11	RES, ADJ, METAL GLAZE 220K
RV503	1-230-528-11	RES, ADJ, METAL GLAZE 220K
RV504	1-230-523-11	RES, ADJ, METAL GLAZE 10K

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*A-7060-054-A MC-8 BOARD, COMPLETE

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2-279-715-21 RIVET, NYLON

CAPACITOR

Ref No.	Part No.	Description				Remark
C501	1-124-233-00	ELECT	10MF	20%	16V	
C502	1-124-233-00	ELECT	10MF	20%	16V	
C503	1-124-275-00	ELECT	2.2MF	20%	35V	
C504	1-124-275-00	ELECT	2.2MF	20%	35V	
C505	1-124-234-00	ELECT	22MF	20%	10V	
C506	1-163-031-00	CERAMIC CHIP	0.01MF		50V	
C507	1-163-020-00	CERAMIC CHIP	0.0082MF	10%	50V	
C508	1-124-257-00	ELECT	2.2MF	20%	35V	
C509	1-163-133-00	CERAMIC CHIP	470PF	5%	50V	
C510	1-124-268-00	ELECT	0.22MF	20%	50V	
C512	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V	
C513	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V	
C514	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C515	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C516	1-124-287-00	ELECT	10MF	20%	10V	
C518	1-163-075-00	CERAMIC CHIP	0.047MF	10%	25V	
C519	1-124-275-00	ELECT	2.2MF	20%	35V	
C520	1-124-231-11	ELECT	4.7MF	20%	16V	
C601	1-163-105-00	CERAMIC CHIP	33PF	5%	50V	
C602	1-163-105-00	CERAMIC CHIP	33PF	5%	50V	
C603	1-124-233-00	ELECT	10MF	20%	16V	
C604	1-124-222-00	ELECT	22MF	20%	6.3V	
C605	1-124-234-00	ELECT	22MF	20%	16V	
C606	1-163-127-00	CERAMIC CHIP	270PF	5%	50V	
C607	1-124-233-00	ELECT	10MF	20%	16V	
C608	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V	
C609	1-124-254-00	ELECT	0.68MF	20%	50V	
C610	1-163-077-00	CERAMIC CHIP	0.1MF		50V	
C611	1-163-064-00	CERAMIC CHIP	0.027MF	10%	50V	
C614	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V	

CONNECTOR

CN501	*1-564-013-00	PIN, CONNECTOR 3P
CN502	*1-564-022-00	PIN, CONNECTOR 12P
CN503	*1-564-028-00	PIN, CONNECTOR 3P
CN505	*1-564-012-00	PIN, CONNECTOR 2P
CN506	*1-562-583-11	CONNECTOR (FPC & FC)
CN507	*1-564-014-00	PIN, CONNECTOR 4P
CN508	*1-564-014-00	PIN, CONNECTOR 4P

DIODE

D501	8-719-101-23	DIODE 1SS123
D601	8-719-200-27	DIODE E10DS2
D602	8-719-200-27	DIODE E10DS2
D603	8-719-100-05	DIODE 1S2837
D604	8-719-100-03	DIODE 1S2835
D605	8-719-914-11	DIODE HZ4ALL
D606	8-719-100-05	DIODE 1S2837
D607	8-719-100-03	DIODE 1S2835

IC

IC501	8-759-102-29	IC CX20115
IC502	8-752-003-50	IC CX20035
IC601	8-759-910-67	IC MB88505-245M
IC602	8-759-201-80	IC TC4526BF

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

COIL

Ref No.	Part No.	Description	Remark
L501	1-407-165-XX	MICRO INDUCTOR 47UH	
L601	1-410-125-11	COIL, CHOKE 100UH	
L602	1-408-987-21	MICRO INDUCTOR 330UH	

IC LINK

Ref No.	Part No.	Description	Remark
PS601⚠	1-532-685-11	LINK, IC (ICP-N20)	
PS602⚠	1-532-637-11	LINK, IC (ICP-F25)	

TRANSISTOR

Ref No.	Part No.	Description	Remark
Q502	8-729-100-66	TRANSISTOR 2SC1623	
Q503	8-729-901-04	TRANSISTOR DTA114EK	
Q504	8-729-100-66	TRANSISTOR 2SC1623	
Q505	8-729-100-76	TRANSISTOR 2SA812	
Q506	8-729-100-66	TRANSISTOR 2SC1623	
Q507	8-729-100-76	TRANSISTOR 2SA812	
Q508	8-729-100-76	TRANSISTOR 2SA812	
Q509	8-729-100-66	TRANSISTOR 2SC1623	
Q510	8-729-901-06	TRANSISTOR DTA144EK	
Q511	8-729-901-01	TRANSISTOR DTC144EK	
Q512	8-729-901-06	TRANSISTOR DTA144EK	
Q513	8-729-901-01	TRANSISTOR DTC144EK	
Q514	8-729-901-01	TRANSISTOR DTC144EK	
Q515	8-729-901-01	TRANSISTOR DTC144EK	
Q517	8-729-901-01	TRANSISTOR DTC144EK	
Q518	8-729-245-83	TRANSISTOR 2SC2458	
Q601	8-729-900-98	TRANSISTOR DTC143TK	
Q602	8-729-900-98	TRANSISTOR DTC143TK	
Q603	8-729-901-06	TRANSISTOR DTA144EK	
Q604	8-729-901-06	TRANSISTOR DTA144EK	
Q605	8-729-901-06	TRANSISTOR DTA144EK	
Q606	8-729-900-98	TRANSISTOR DTC143TK	
Q607	8-729-901-04	TRANSISTOR DTA114EK	
Q609	8-729-900-98	TRANSISTOR DTC143TK	
Q610	8-729-900-98	TRANSISTOR DTC143TK	
Q611	8-729-901-01	TRANSISTOR DTC144EK	
Q612	8-729-901-01	TRANSISTOR DTC144EK	
Q613	8-729-100-66	TRANSISTOR 2SC1623	
Q614	8-729-100-66	TRANSISTOR 2SC1623	
Q615	8-729-901-05	TRANSISTOR DTA124EK	
Q616	8-729-900-53	TRANSISTOR DTC114EK	
Q617	8-729-901-05	TRANSISTOR DTA124EK	
Q618	8-729-199-92	TRANSISTOR 2SD999	
Q619	8-729-202-86	TRANSISTOR 2SA1242LB	
Q620	8-729-100-66	TRANSISTOR 2SC1623	
Q621	8-729-100-76	TRANSISTOR 2SA812	
Q623	8-729-100-76	TRANSISTOR 2SA812	
Q624	8-729-100-66	TRANSISTOR 2SC1623	
Q625	8-729-100-66	TRANSISTOR 2SC1623	
Q626	8-729-100-66	TRANSISTOR 2SC1623	
Q627	8-729-901-01	TRANSISTOR DTC144EK	
Q630	8-729-901-06	TRANSISTOR DTA144EK	
Q631	8-729-100-66	TRANSISTOR 2SC1623	

RESISTOR

Ref No.	Part No.	Description				Remark
R501	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R502	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R503	1-216-295-00	METAL CHIP	0	5%	1/10W	
R504	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R505	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R507	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R508	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R509	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R510	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R511	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R512	1-216-103-00	METAL CHIP	180K	5%	1/10W	
R513	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R514	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R515	1-216-095-00	METAL CHIP	82K	5%	1/10W	
R516	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R517	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R518	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R519	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R520	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R521	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R522	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R523	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R524	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R525	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R526	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R527	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R528	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R529	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R530	1-247-879-00	CARBON	100K	5%	1/6W	
R588	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R601	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R602	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R603	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R604	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R605	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R606	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R607	1-216-166-00	METAL CHIP	47	5%	1/8W	
R608	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R609	1-216-172-00	METAL CHIP	82	5%	1/8W	
R610	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R611	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R612	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R613	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R614	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R615	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R616	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R617	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R618	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R619	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R620	1-216-081-00	METAL CHIP	22K	5%	1/10W	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref No.	Part No.	Description				Remark
R621	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R622	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R623	1-216-190-00	METAL CHIP	470	5%	1/8W	
R624	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R625	1-216-041-00	METAL CHIP	470	5%	1/10W	
R626	1-216-045-00	METAL CHIP	680	5%	1/10W	
R627	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R628	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R629	⚠1-216-194-91	METAL CHIP	680	5%	1/8W	
R630	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R631	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R632	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R635	1-216-134-00	METAL CHIP	2.2	5%	1/8W	
R636	1-216-134-00	METAL CHIP	2.2	5%	1/8W	
R637	1-216-134-00	METAL CHIP	2.2	5%	1/8W	
R638	1-216-134-00	METAL CHIP	2.2	5%	1/8W	
R639	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R640	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R641	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R642	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R643	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R644	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R645	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R646	⚠1-216-194-91	METAL CHIP	680	5%	1/8W	
R647	⚠1-216-194-91	METAL CHIP	680	5%	1/8W	
R650	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R651	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R652	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R653	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R654	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R655	1-216-033-00	METAL CHIP	220	5%	1/10W	
R656	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R657	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	

VARIABLE RESISTOR

RV601	1-230-520-11	RES, ADJ, METAL GLAZE 1K

CRYSTAL

X601	1-567-346-11	OSCILLATOR, CERAMIC 5MHZ

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*A-7060-106-A DS-8 BOARD, COMPLETE
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CAPACITOR

C601	1-163-081-00	CERAMIC CHIP	0.22MF		25V
C602	1-163-081-00	CERAMIC CHIP	0.22MF		25V
C603	1-124-258-00	ELECT	3.3MF	20%	25V
C604	1-124-258-00	ELECT	3.3MF	20%	25V
C605	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C606	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C607	1-163-035-00	CERAMIC CHIP	0.047MF		50V

Ref No.	Part No.	Description			Remark
C608	1-124-232-11	ELECT	6.8MF	20%	16V
C610	1-163-081-00	CERAMIC CHIP	0.22MF		25V
C611	1-163-081-00	CERAMIC CHIP	0.22MF		25V
C612	1-163-031-00	CERAMIC CHIP	0.01MF		50V
C613	1-163-031-00	CERAMIC CHIP	0.01MF		50V
C615	1-163-081-00	CERAMIC CHIP	0.22MF		25V
C616	1-163-035-00	CERAMIC CHIP	0.047MF		50V

CONNECTOR

CN010	1-564-548-11	PIN, BOARD TO BOARD (L TYPE)5P
CN011	1-564-549-11	PIN, BOARD TO BOARD (L TYPE)10P
CN012	1-564-549-11	PIN, BOARD TO BOARD (L TYPE)10P

DIODE

D601	8-719-100-05	DIODE 1S2837
D602	8-719-100-05	DIODE 1S2837
D603	8-719-100-05	DIODE 1S2837
D604	8-719-100-03	DIODE 1S2835
D605	8-719-106-43	DIODE RD9.1M-B1
D606	8-719-105-58	DIODE RD3.9M-B2

IC

IC601	8-759-200-82	IC TC4069UBF
IC602	8-759-200-65	IC TC4013BF
IC603	8-759-910-84	IC MB88201-170N
IC604	8-759-100-93	IC UPC393G2

COIL

L601	1-408-987-21	MICRO INDUCTOR 330UH

TRANSISTOR

Q601	8-729-901-06	TRANSISTOR DTA144EK
Q602	8-729-901-06	TRANSISTOR DTA144EK
Q603	8-729-901-01	TRANSISTOR DTC144EK
Q604	8-729-100-66	TRANSISTOR 2SC1623
Q605	8-729-901-01	TRANSISTOR DTC144EK
Q606	8-729-100-66	TRANSISTOR 2SC1623
Q607	8-729-901-01	TRANSISTOR DTC144EK
Q608	8-729-900-98	TRANSISTOR DTC143TK
Q609	8-729-901-01	TRANSISTOR DTC144EK
Q610	8-729-100-66	TRANSISTOR 2SC1623
Q611	8-729-901-01	TRANSISTOR DTC144EK
Q612	8-729-901-01	TRANSISTOR DTC144EK
Q613	8-729-901-01	TRANSISTOR DTC144EK

RESISTOR

R601	1-216-033-00	METAL CHIP	220	5%	1/10W
R602	1-216-089-00	METAL CHIP	47K	5%	1/10W
R603	1-216-089-00	METAL CHIP	47K	5%	1/10W
R604	1-216-113-00	METAL CHIP	470K	5%	1/10W
R605	1-216-089-00	METAL CHIP	47K	5%	1/10W
R606	1-216-033-00	METAL CHIP	220	5%	1/10W

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref No.	Part No.	Description	Remark
R607	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R608	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R609	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R610	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R611	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R612	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R613	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R614	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R615	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R616	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R617	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R618	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R619	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R620	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R621	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R622	1-216-037-00	METAL CHIP 330 5% 1/10W	
R623	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R624	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R625	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R626	1-216-039-00	METAL CHIP 390 5% 1/10W	
R627	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R628	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R629	1-216-295-00	METAL CHIP 0 5% 1/10W	
R630	1-216-039-00	METAL CHIP 390 5% 1/10W	

CRYSTAL

Ref No.	Part No.	Description	Remark
X601	1-527-992-11	OSCILLATOR, CERAMIC 6MHZ	

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*A-7060-107-A HS-5 BOARD, COMPLETE

CAPACITOR

Ref No.	Part No.	Description	Remark
C601	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C602	1-125-373-11	DOUBLE LAYERS 22000MF 5.5V	

CONNECTOR

Ref No.	Part No.	Description	Remark
CN005	1-564-610-21	CONNECTOR, BOARD TO BOARD	
CN403	*1-564-027-00	PIN, CONNECTOR 2P	
CN404	*1-564-028-00	PIN, CONNECTOR 3P	

DIODE

Ref No.	Part No.	Description	Remark
D602	8-719-105-82	DIODE RD5.1M-B2	
D603	8-719-106-16	DIODE RD6.8M-B1	

IC LINK

Ref No.	Part No.	Description	Remark
PS601⚠	1-532-605-11	LINK, IC	

TRANSISTOR

Ref No.	Part No.	Description	Remark
Q601	8-729-100-66	TRANSISTOR 2SC1623	
Q602	8-729-113-33	TRANSISTOR 2SB733-4	
Q603	8-729-700-08	TRANSISTOR NJL7141E	
Q604	8-729-159-64	TRANSISTOR 2SD596	
Q605	8-729-900-53	TRANSISTOR DTC114EK	
Q607	8-729-202-86	TRANSISTOR 2SA1242LB	
Q608	8-729-100-76	TRANSISTOR 2SA812	
Q609	8-729-901-01	TRANSISTOR DTC144EK	

RESISTOR

Ref No.	Part No.	Description	Remark
R601	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R602	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R603	1-216-190-00	METAL CHIP 470 5% 1/8W	
R604	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R605	1-216-190-00	METAL CHIP 470 5% 1/8W	
R606	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R607	1-216-168-00	METAL CHIP 56 5% 1/8W	
R608	1-216-168-00	METAL CHIP 56 5% 1/8W	
R609	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R610	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R612	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R613	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R614	1-216-109-00	METAL CHIP 330K 5% 1/10W	
R615	1-216-073-00	METAL CHIP 10K 5% 1/10W	

VARIABLE RESISTOR

Ref No.	Part No.	Description	Remark
RV601	1-230-524-11	RES, ADJ, METAL GLAZE 22K	

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*A-7060-104-A RS-5 BOARD, COMPLETE

Ref No.	Part No.	Description	Remark
	*3-686-814-01	HOLDER, REEL SENSOR	

CAPACITOR

Ref No.	Part No.	Description	Remark
C501	1-124-234-00	ELECT 22MF 20% 10V	
C601	1-124-225-00	ELECT 100MF 20% 6.3V	

CONNECTOR

Ref No.	Part No.	Description	Remark
CN515	*1-564-012-00	PIN, CONNECTOR 2P	
CN516	*1-564-012-00	PIN, CONNECTOR 2P	

DIODE

Ref No.	Part No.	Description	Remark
D501	8-719-100-03	DIODE 1S2835	
D502	8-719-100-03	DIODE 1S2835	
D503	8-719-100-03	DIODE 1S2835	

IC

Ref No.	Part No.	Description	Remark
IC501	8-759-910-70	IC MB3763PS	
IC502	8-759-908-81	IC MB3763PF	

DIODE

Ref No.	Part No.	Description	Remark
PH601	8-719-751-42	DIODE NJL5141E	
PH602	8-719-751-42	DIODE NJL5141E	
PH603	8-719-751-42	DIODE NJL5141E	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

TRANSISTOR

Ref No.	Part No.	Description	Remark
Q601	8-729-100-66	TRANSISTOR 2SC1623	
Q602	8-729-100-66	TRANSISTOR 2SC1623	
Q603	8-729-100-66	TRANSISTOR 2SC1623	
Q604	8-729-100-66	TRANSISTOR 2SC1623	
Q605	8-729-100-66	TRANSISTOR 2SC1623	
Q606	8-729-100-66	TRANSISTOR 2SC1623	
Q607	8-729-100-66	TRANSISTOR 2SC1623	

RESISTOR

Ref No.	Part No.	Description	Remark
R601	1-216-180-00	METAL CHIP 180 5% 1/8W	
R602	1-216-180-00	METAL CHIP 180 5% 1/8W	
R603	1-216-160-00	METAL CHIP 27 5% 1/8W	
R604	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R605	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R606	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R607	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R608	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R609	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R610	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R611	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R612	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R613	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R614	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R615	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R616	1-216-180-00	METAL CHIP 180 5% 1/8W	

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*A-7060-105-A FE-4 BOARD, COMPLETE

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CAPACITOR

Ref No.	Part No.	Description	Remark
C101	1-163-031-00	CERAMIC CHIP 0.01MF 50V	
C102	1-163-031-00	CERAMIC CHIP 0.01MF 50V	
C103	1-163-111-00	CERAMIC CHIP 56PF 5% 50V	
C104	1-163-119-00	CERAMIC CHIP 120PF 5% 50V	
C105	1-163-031-00	CERAMIC CHIP 0.01MF 50V	
C106	1-163-034-00	CERAMIC CHIP 0.033MF 50V	

CONNECTOR

Ref No.	Part No.	Description	Remark
CN113	*1-564-002-00	PIN, CONNECTOR 3P	

COIL

Ref No.	Part No.	Description	Remark
L101	1-408-969-21	MICRO INDUCTOR 8.2UH	
L102 ⚠	1-408-948-21	MICRO INDUCTOR 220UH	

TRANSISTOR

Ref No.	Part No.	Description	Remark
Q101	8-729-100-76	TRANSISTOR 2SA812	
Q102	8-729-117-54	TRANSISTOR 2SA1175	

RESISTOR

Ref No.	Part No.	Description	Remark
R101	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R102	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R103	1-216-037-00	METAL CHIP 330 5% 1/10W	
R104	1-216-041-00	METAL CHIP 470 5% 1/10W	
R105	1-216-308-00	METAL CHIP 4.7 5% 1/10W	

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*A-7060-108-A ZM-2 BOARD, COMPLETE

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CAPACITOR

Ref No.	Part No.	Description	Remark
C702	1-124-604-00	ELECT 330MF 20% 10V	
C703	1-124-230-61	ELECT 47MF 20% 10V	
C704	1-124-229-00	ELECT 33MF 20% 10V	
C705	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C706	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C707	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C708	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C709	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C710	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	

CONNECTOR

Ref No.	Part No.	Description	Remark
CN711	*1-564-001-11	PIN, CONNECTOR 2P	
CN712	*1-564-002-00	PIN, CONNECTOR 3P	
CN713	*1-564-012-00	PIN, CONNECTOR 2P	
CN714	*1-564-013-00	PIN, CONNECTOR 3P	
CN715	*1-564-008-00	PIN, CONNECTOR 9P	
CN716	*1-564-003-00	PIN, CONNECTOR 4P	

COIL

Ref No.	Part No.	Description	Remark
L701	1-407-718-00	MICRO INDUCTOR 1.2MMH	

IC LINK

Ref No.	Part No.	Description	Remark
PS701 ⚠	1-532-637-11	LINK, IC (ICP-N25)	

TRANSISTOR

Ref No.	Part No.	Description	Remark
Q701	8-729-100-76	TRANSISTOR 2SA812	
Q702	8-729-100-76	TRANSISTOR 2SA812	
Q703	8-729-103-72	TRANSISTOR 2SD1005	
Q704	8-729-100-66	TRANSISTOR 2SC1623	
Q705	8-729-100-66	TRANSISTOR 2SC1623	

RESISTOR

Ref No.	Part No.	Description	Remark
R701	1-216-238-00	METAL CHIP 47K 5% 1/8W	
R702	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R703	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R704	1-216-214-00	METAL CHIP 4.7K 5% 1/8W	
R705	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R706	1-216-158-00	METAL CHIP 22 5% 1/8W	
R707	1-216-158-00	METAL CHIP 22 5% 1/8W	
R709	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref No.	Part No.	Description				Remark
R710	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R711	1-216-214-00	METAL CHIP	4.7K	5%	1/8W	
R712	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R713	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R714	1-247-210-00	CARBON	56	5%	1/2W	

* * *

*A-7060-109-A RR-9 BOARD, COMPLETE

	3-686-992-01	SCREW (2.6X5.5), TAPPING

CAPACITOR

Ref No.	Part No.	Description				Remark
C751	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C752	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C753	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C754	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C755	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C756	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C757	1-124-229-00	ELECT	33MF	20%	6.3V	
C758	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C759	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	

DIODE

Ref No.	Part No.	Description
D751	8-719-918-67	DIODE GL-1EG102

RESISTOR

Ref No.	Part No.	Description				Remark
R751	1-211-443-00	CARBON	470	5%	1/8W	F
R752	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R753	1-216-295-00	METAL CHIP	0	5%	1/10W	
R754	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R755	1-216-295-00	METAL CHIP	0	5%	1/10W	
R756	1-216-073-00	METAL CHIP	10K	5%	1/10W	

SWITCH

Ref No.	Part No.	Description
S751	1-554-973-11	SWITCH, SLIDE
S752	1-554-174-00	SWITCH, KEY BOARD
S753	1-554-364-00	SWITCH, SLIDE
S754	1-554-945-11	SWITCH, SLIDE

* * *

*A-7060-110-A MA-12 BOARD, COMPLETE

CAPACITOR

Ref No.	Part No.	Description				Remark
C401	1-124-225-00	ELECT	100MF	20%	6.3V	
C402	1-124-225-00	ELECT	100MF	20%	6.3V	
C403	1-131-401-00	TANTALUM	0.068MF	20%	35V	
C404	1-131-401-00	TANTALUM	0.068MF	20%	35V	
C406	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V	
C408	1-124-245-00	ELECT	4.7MF	20%	35V	
C409	1-124-224-00	ELECT	47MF	20%	6.3V	
C410	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	

CONNECTOR

Ref No.	Part No.	Description
CN013	*1-564-878-11	PIN, BOARD TO BOARD(L TYPE) 4P

TRANSISTOR

Ref No.	Part No.	Description
Q401	8-729-162-44	TRANSISTOR 2SB624-BV4
Q402	8-729-271-23	TRANSISTOR 2SC2712
Q403	8-729-271-23	TRANSISTOR 2SC2712

RESISTOR

Ref No.	Part No.	Description				Remark
R401	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R402	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R403	1-216-162-00	METAL CHIP	33	5%	1/8W	
R404	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R405	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R406	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R408	1-216-035-00	METAL CHIP	270	5%	1/10W	
R409	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R410	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R411	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R412	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R413	1-216-045-00	METAL CHIP	680	5%	1/10W	

* * *

*1-614-849-11 MJ-6 BOARD

DIODE

Ref No.	Part No.	Description
D401	8-719-106-17	DIODE RD6.8M-B2

JACK

Ref No.	Part No.	Description
J401	1-507-957-11	JACK (2 GANG)

* * *

*A-7070-024-A LD-1 BOARD, COMPLETE

DIODE

Ref No.	Part No.	Description
D901	8-719-912-46	DIODE GL450

* * *

MS-4 BOARD

CAPACITOR

Ref No.	Part No.	Description		Remark
C901	1-163-038-00	CERAMIC CHIP	0.1MF	25V

When indicating parts by reference number, please include the board name.

CONNECTOR

Ref No.	Part No.	Description	Remark
CN905	*1-564-613-11	PIN, CONNECTOR (HOOK TYPE)	

* * *

LS-9 BOARD

CONNECTOR

Ref No.	Part No.	Description	Remark
CN904	*1-564-613-21	PIN, CONNECTOR (HOOK TYPE)	

* * *

Ref No.	Part No.	Description	Remark
	*1-613-579-12	EP-2 BOARD	

JACK

Ref No.	Part No.	Description	Remark
J491	1-507-921-00	JACK	

* * *

Ref No.	Part No.	Description	Remark
	*1-613-581-12	FU-34 BOARD	
	*1-533-146-00	HOLDER, FUSE	

FUSE

Ref No.	Part No.	Description	Remark
F901	⚠1-532-237-00	FUSE, TIME-LAG 3.15A 250V	

* * *

Ref No.	Part No.	Description	Remark
	*1-613-580-12	EF-3 BOARD	

CAPACITOR

Ref No.	Part No.	Description	Remark
C772	1-161-039-00	CERAMIC 0.001MF 10% 25V	
C773	1-161-039-00	CERAMIC 0.001MF 10% 25V	
C774	1-161-013-00	CERAMIC 0.01MF 10% 25V	
C775	1-161-039-00	CERAMIC 0.001MF 10% 25V	
C776	1-161-039-00	CERAMIC 0.001MF 10% 25V	

CONNECTOR

Ref No.	Part No.	Description	Remark
CN772	1-562-183-00	SOCKET 8P	

* * *

Ref No.	Part No.	Description	Remark
	*A-7060-103-A	VF-4 BOARD, COMPLETE	
	1-526-793-21	SOCKET ASSY, CRT	
	*3-662-075-00	COVER, CONTROL	

CAPACITOR

Ref No.	Part No.	Description	Remark
C001	1-124-229-00	ELECT 33MF 20% 10V	
C002	1-163-339-91	CERAMIC CHIP 0.0015MF 5% 50V	
C003	1-124-255-00	ELECT 1MF 20% 50V	
C004	1-163-017-00	CERAMIC CHIP 0.0047MF 10% 50V	
C005	1-124-233-00	ELECT 10MF 20% 16V	
C006	1-163-004-00	CERAMIC CHIP 390PF 10% 50V	
C007	1-163-023-00	CERAMIC CHIP 0.015MF 10% 50V	
C008	1-163-023-00	CERAMIC CHIP 0.015MF 10% 50V	
C009	1-124-233-00	ELECT 10MF 20% 16V	
C010	1-124-233-00	ELECT 10MF 20% 16V	
C011	1-131-361-00	TANTALUM 2.2MF 10% 20V	
C012	1-163-339-91	CERAMIC CHIP 0.0015MF 5% 50V	
C013	1-163-007-00	CERAMIC CHIP 680PF 10% 50V	
C014	1-124-604-00	ELECT 330MF 20% 10V	
C015	1-124-471-00	ELECT 1000MF 20% 6.3V	
C016	1-163-033-00	CERAMIC CHIP 0.022MF 10% 50V	
C017	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C018	1-163-017-00	CERAMIC CHIP 0.0047MF 10% 50V	
C019	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C020	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C021	1-163-125-00	CERAMIC CHIP 220PF 5% 50V	
C022	1-163-005-00	CERAMIC CHIP 470PF 10% 50V	
C023	1-124-140-00	ELECT 220MF 20% 6.3V	
C024	1-124-604-00	ELECT 330MF 20% 10V	
C025	1-124-255-00	ELECT 1MF 20% 50V	
C026	1-163-017-00	CERAMIC CHIP 0.0047MF 10% 50V	
C027	1-163-018-00	CERAMIC CHIP 0.0056MF 10% 50V	
C028	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	
C029	1-163-013-00	CERAMIC CHIP 0.0022MF 10% 50V	
C030	1-163-015-00	CERAMIC CHIP 0.0033MF 10% 50V	
C031	1-102-038-00	CERAMIC 0.001MF 99% 500V	
C032	1-163-023-00	CERAMIC CHIP 0.015MF 10% 50V	
C033	1-102-038-00	CERAMIC 0.001MF 99% 500V	
C034	1-163-023-00	CERAMIC CHIP 0.015MF 10% 50V	
C036	1-123-619-00	ELECT 4.7MF 20% 50V	
C043	1-124-255-00	ELECT 1MF 20% 50V	
C044	1-163-038-00	CERAMIC CHIP 0.1MF 25V	

CONNECTOR

Ref No.	Part No.	Description	Remark
CN001	*1-564-269-00	PIN, CONNECTOR 3P	
CN002	*1-564-269-00	PIN, CONNECTOR 3P	
CN003	*1-564-002-00	PIN, CONNECTOR 3P	

DIODE

Ref No.	Part No.	Description	Remark
D001	8-719-101-23	DIODE 1SS123	
D002	8-719-101-23	DIODE 1SS123	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref No.	Part No.	Description	Remark
D003	8-719-100-03	DIODE 1S2835	
D004	8-719-105-90	DIODE RD5.6M-B1	
D006	8-719-904-05	DIODE 1N4005	
D007	8-719-904-05	DIODE 1N4005	
D008	8-719-904-05	DIODE 1N4005	
D012	8-719-101-23	DIODE 1SS123	
D013	8-719-100-03	DIODE 1S2835	

IC

Ref No.	Part No.	Description	Remark
IC001	8-759-314-41	IC HA11441	

COIL

Ref No.	Part No.	Description	Remark
L001	1-407-167-XX	MICRO INDUCTOR 68UH	
L002	1-459-549-11	COIL, FERRITE (HLC)	
L003	1-408-970-21	MICRO INDUCTOR 10UH	

TRANSISTOR

Ref No.	Part No.	Description	Remark
Q001	8-729-100-66	TRANSISTOR 2SC1623	
Q002	8-729-600-18	TRANSISTOR 2SC633-SP8	
Q003	8-729-100-76	TRANSISTOR 2SA812	
Q004	8-729-100-66	TRANSISTOR 2SC1623	
Q005	8-729-216-32	TRANSISTOR 2SA1163	
Q006	8-729-100-66	TRANSISTOR 2SC1623	
Q007	8-729-100-76	TRANSISTOR 2SA812	
Q008	8-729-100-66	TRANSISTOR 2SC1623	
Q009	8-729-805-13	TRANSISTOR 2SC1475-13	
Q010 ⚠	8-729-100-66	TRANSISTOR 2SC1623	

RESISTOR

Ref No.	Part No.	Description				Remark
R001	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R002	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R003	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R004	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R005	1-216-107-00	METAL CHIP	270K	5%	1/10W	
R006	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R007	1-216-001-00	METAL CHIP	10	5%	1/10W	
R008 ⚠	1-216-025-91	METAL CHIP	100	5%	1/10W	
R009	1-216-031-00	METAL CHIP	180	5%	1/10W	
R010	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R011	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R012	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R013	1-216-087-00	METAL CHIP	39K	5%	1/10W	
R014	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R015	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R016	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R017	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R018	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R020	1-216-001-00	METAL CHIP	10	5%	1/10W	
R021	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R022	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R023	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R024	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R025	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R026	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R027	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R028	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R029	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R030	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R031	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R032	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R033	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R034	1-216-107-00	METAL CHIP	270K	5%	1/10W	
R035	1-216-131-11	METAL CHIP	2.7M	5%	1/10W	
R036	1-216-131-11	METAL CHIP	2.7M	5%	1/10W	
R037	1-216-035-00	METAL CHIP	270	5%	1/10W	
R038	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R039	1-216-019-00	METAL CHIP	56	5%	1/10W	
R040 ⚠	1-216-015-91	METAL CHIP	39	5%	1/10W	
R041 ⚠	1-216-298-91	METAL CHIP	2.2	5%	1/10W	
R042	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R046	1-216-295-00	METAL CHIP	0	5%	1/10W	
R049	1-216-296-00	METAL CHIP	0	5%	1/8W	
R050	1-216-295-00	METAL CHIP	0	5%	1/10W	
R051	1-216-296-00	METAL CHIP	0	5%	1/8W	
R053	1-216-296-00	METAL CHIP	0	5%	1/8W	
R055	1-216-295-00	METAL CHIP	0	5%	1/10W	
R056	1-216-295-00	METAL CHIP	0	5%	1/10W	
R060	1-216-295-00	METAL CHIP	0	5%	1/10W	
R061	1-216-295-00	METAL CHIP	0	5%	1/10W	
R063	1-216-295-00	METAL CHIP	0	5%	1/10W	

VARIABLE RESISTOR

Ref No.	Part No.	Description	Remark
RV001	1-226-703-00	RES, ADJ, METAL GLAZE 10K	
RV002	1-226-702-00	RES, ADJ, METAL GLAZE 2.2K	
RV003	1-226-772-00	RES, ADJ, METAL GLAZE 4.7K	
RV004	1-226-774-00	RES, ADJ, METAL GLAZE 47K	
RV005	1-228-762-00	RES, ADJ, METAL GLAZE 1M	
RV006	1-230-041-00	RES, ADJ, METAL GLAZE 2.2M	

TRANSFORMER

Ref No.	Part No.	Description	Remark
T001 ⚠	1-439-342-21	TRANSFORMER ASSY, FLYBACK	

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The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

TL-16 TL-15

Ref No.	Part No.	Description	Remark
	*1-614-872-11	TL-16 BOARD	

DIODE

D009	8-719-812-44	DIODE TL0124	
D010	8-719-812-31	DIODE TLR123	
D011	8-719-812-42	DIODE TLY124	

* * *

	*1-614-871-11	TL-15 BOARD	

DIODE

D005	8-719-800-24	DIODE TLR147	

* * *

MISCELLANEOUS

	A-7040-003-A	M-SW ASSY	
	X-3686-549-1	L-SW ASSY	
	1-535-535-11	TERMINAL, SHAFT GROUND	
	8-750-010-23	CCD IMAGER BLOCK (IU021-K1AA)	
	8-814-208-00	MICROPHONE, BUILT-IN (C-2005)	
C902	1-161-073-11	CAP, CERAMIC 0.033MF	
DR901 ⚠	1-464-376-21	CONVERTER, DC-DC	
DR902 ⚠	1-464-377-12	CONVERTER, DC-DC (CAMERA)	
M901 ⚠	A-7040-031-A	MOTOR ASSY, L (LOADING)	
M902	8-838-077-01	MOTOR, DC (BHF-2800B) (CAPSTAN)	
M903 ⚠	8-835-110-01	MOTOR, DC (DNR-5301A) (CONTROL)	
M904 ⚠	8-835-112-01	MOTOR, DC (DNR-6300B) (ZOOM)	
PM901 ⚠	1-454-377-11	SOLENOID, PLUNGER	
S901	1-553-226-00	SWITCH, LEAF (CASSETTE LOCK)	
S902	1-554-942-11	SWITCH, PUSH (RECOG)	
S903	1-554-943-11	SWITCH, PUSH (START/STOP)	
S904	1-554-944-11	SWITCH, PUSH (ZOOM)	
CNP772	1-556-824-31	CORD, CONNECTION (WITH PLUG)8P	
L901 ⚠	1-451-251-22	DEFLECTION YOKE (MONOCHROME)	
V901 ⚠	1-546-051-11	CATHODE-RAY TUBE,B/W (C1M30P4)	

* * *

Ref No.	Part No.	Description	Remark

ACCESSORIES AND PACKING MATERIALS

Part No.	Description	Remark
*3-578-954-00	BAG, PROTECTION	
3-686-846-02	BELT, SHOULDER	
*3-688-951-01	SHEET, PREVENTION, RUB	
*3-688-957-01	CUSHION INNER	
*3-688-972-01	INDIVIDUAL CARTON	
*3-688-973-01	CUSHION (UPPER)	
3-688-974-01	CUSHION (LOWER)	
3-701-625-00	BAG, POLYETHYLENE	
3-760-284-11	MANUAL, INSTRUCTION (ENGLISH)	
3-760-284-41	MANUAL, INSTRUCTION (FRENCH, GERMAN, DUTCH)	
3-760-284-51	MANUAL, INSTRUCTION (SPANISH, SWEDISH, ITALIAN)	

* * *

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

SECTION 7
ADJUSTMENT

TABLE OF CONTENTS

Section *Title* *Page*

1. CAMERA SECTION ADJUSTMENT

1-1. List of Servicing Jigs 185
1-2. Preparation 186
1-3. Setting Up and Connection Diagram 186
1-4. Precautions 187
1-5. RV and TP Location 188
1-6. Flange Back Adjustment. 189
1-7. Iris Adjustment 189
1-8. AGC Setting Adjustment. 190
1-9. Auto White Balance Adjustment (1) 190
1-10. G Pedestal Adjustment. 190
1-11. Gamma Adjustment 190
1-12. White Clip Adjustment (1). 190
1-13. G Pedestal Adjustment (2). 191
1-14. R and B Pedestal Adjustment 191
1-15. MPX Adjustment (Use a Vectorscope) 191
1-16. Carrier Balance Adjustment (Use a Vectorscope) 191
1-17. G_1, and G_2 Gain-Adjustment 192
1-18. RB_1 and RB_2 Gain Adjustment. 192
1-19. Fader Gain Adjustment 192
1-20. Setting Adjustment. 192
1-21. Aperture Adjustment. 193
1-22. White Clip Adjustment (2). 193
1-23. Auto White Balance Adjustment (2) (Use a Vectorscope) 193
1-24. Max Gain Adjustment 194
1-25. AGC Set Adjustment (2). 194
1-26. AGH Set Adjustment. 194
1-27. LX Adjustment 194
1-28. Color Reproducibility Adjustment (Use a Vectorscope) 194
1-29. Burst Phase Adjustment 195
1-30. Burst Gain Adjustment. 195
1-31. R and B Gain Adjustments (Use a Vectorscope) 195
1-32. MR_1 and MB_1 Adjustment (Use a Vectorscope) 195
1-33. MR_2 and MB_2 Adjustment (Use a Vectorscope) 196
1-34. Video Out Signal Confirmation 196

2. MECHANISM SECTION ADJUSTMENT (VIDEO SECTION)

2-1. Preparation Items for Mechanism Section Checking Adjustment and Replacement 197
2-1-1. Opening Control Panel 197
2-1-2. Opening HS-5 Board and DC-DC Converter . 197
2-1-3. Opening AR-2 Board 198
2-1-4. Opening VI-7 Board 198
2-1-5. Opening MC-8 Board 199
2-1-6. Cassette Compartment Assembly 199
2-1-7. Operating without Cassette Compartment Assembly and Tape. 200
2-1-8. Mode Selecter Operation. 201
2-2. Periodic Checking and Maintenance Items. . . . 203
2-2-1. Cleaning Rotary Drum Assembly 203
2-2-2. Tape Guide System Cleaning 203
2-2-3. Drive System Cleaning 203
2-2-4. Periodic Check Items. 204
2-2-5. Summary of Servicing Tools. 205
2-3. Mechanism Section Checking, Adjustment and Replacement 206
2-3-1. S Reel Table Assembly 206
2-3-2. T Reel Table Assembly. 207
2-3-3. Pinch Press Arm Assembly. 208
2-3-4. Tension Regulator Arm Assembly 209
2-3-5. Tension Regulator Band Assembly 210
2-3-6. Loading Motor Assembly 211
2-3-7. Loading Ring Assembly 212
2-3-8. Pinch Roller Assembly 214
2-3-9. Slant Guide Chassis Assembly. 216
2-3-10. No. 2 Guide Assembly 217
2-3-11. L Slider Assembly. 218
2-3-12. L-SW Assembly 219
2-3-13. Plunger Solenoid 220
2-3-14. M-SW Assembly. 221
2-3-15. M Slider 223
2-3-16. Capstan Motor. 225
2-3-17. State of Wear of Video Heads Check 226
2-3-18. Rotary Upper Drum Replacement 227
2-3-19. Drum Assembly Replacement. 228
2-3-20. Adjustment After Replacing No. 3 and 4 Guides 228
2-3-21. No. 5 Guide Assembly 229
2-3-22. FWD Back Tension Adjustment. 229
2-3-23. Checking and Adjustment of Timing Belt Tension. 230
2-3-24. Checking S and T Main Brake Torques. . . . 231
2-3-25. Checking S and T Saft Brake Torques 232
2-3-26. Checking REV and REW Brake Torques. . . 232
2-3-27. Checking by FWD and RVS Take-Up Torque Cassette. 233
2-4. Tape Path Adjustment 233
2-4-1. Preparation for Adjustment 233
2-4-2. Inlet Side Adjustment 235
2-4-3. Outlet Side Adjustment 236
2-4-4. Checking After Adjustment 237

3. VIDEO SECTION ADJUSTMENT

3-1. Power Supply Check (VI-7 Board) 242

to next page

Section *Title* *Page*

3-2. System Control Adjustment 242
3-2-1. Battery Failure Adjustment (HS-5, SK-4 Board) 242
3-2-2. Flying Erase Check (FE-4 Board) 242
3-3. Servo System Adjustment 242
3-3-1. Motor Power Voltage Adjustment (MC-8 Board) 242
3-3-2. Capstan Free Speed Adjustment (SV-14 and AR-2 Boards) 242
3-3-3. AFT Balance Adjustment (VI-7 and AR-2 Boards) 243
3-3-4. Switching Position Adjustment (SV-14 and AR-2 Boards) 243
3-3-5. PB Pause Delay Time Adjustment (SV-14 Board) 243
3-4. Video System Adjustment 244
3-4-1. Playback Frequency Characteristic Adjustment (AR-2 Board) 244
3-4-2. PB Y Trap Adjustment (AR-2 Board) 244
3-4-3. X'tal Oscillator fo Adjustment (VI-7 Board) 244
3-4-4. 375fH VCO Adjustment (VI-7 Board) 244
3-4-5. Y Comb AGC Adjustment (VI-7 Board) . . . 245
3-4-6. C Comb AGC Adjustment (VI-7 Board) . . . 245
3-4-7. SYNC AGC Adjustment (VI-7 Board) 245
3-4-8. VIDEO OUT Level Adjustment (VI-7 Board) 245
3-4-9. PB Y Level Adjustment (VI-7 Board) 246
3-4-10. Y FM Carrier Frequency Adjustment (VI-7 Board) 246
3-4-11. Y FM Deviation Adjustment (VI-7 Board) . . 246
3-4-12. AC Clip Adjustment (VI-7 Board) 246
3-4-13. Carrier Balance Adjustment (VI-7 Board) . . 247
3-4-14. Chroma Emphasis fo Adjustment (VI-7 Board) 247
3-4-15. REC C RF Trap Adjustment (VI-7 and AR-2 Boards) 247
3-4-16. fH VCO Adjustment (VI-7 Board) 247
3-4-17. GCA GAIN Adjustment (VI-7 Board) 248
3-4-18. REC Y Recording Current Adjustment (AR-2 Board) 248
3-4-19. REC C Recording Current Adjustment (AR-2 Board) 248
3-4-20. REC ATF Recording Current Adjustment (AR-2 Board) 249
3-5. Audio System Adjustment 249
3-5-1. AFM Carrier Frequency Adjustment (AR-2 Board) 249
3-5-2. AFM Deviation Adjustment (AR-2 Board) . . 249
3-5-3. AFM Recording Current Adjustment (AR-2 Board) 250
3-5-4. E-E Output Level Check 250
3-5-5. Overall Level Characteristic Check 250
3-5-6. Overall Distortion Check 250
3-5-7. Overall Noise Level Check 250

4. ELECTRONIC VIEW FINER ADJUSTMENT

4-1. Horizontal Slant Adjustment 251
4-2. Centering Adjustment 251
4-3. Horizontal Amplitude Adjustment (VF-4 Board) 251
4-4. Vertical Amplitude Adjustment (VF-4 Board) 252
4-5. Horizontal Oscillating Frequency Adjustment (VF-4 Board) 252
4-6. Vertical Oscillating Frequency Adjustment (VF-4 Board) 252
4-7. Brightness and Contrast Adjustment (VF-4 Board) 252
4-8. Focus Adjustment (VF-4 Board) 253
4-9. Horizontal and Vertical Amplitude Checking . . 253
5. RV AND TP LOCATION 254

1. CAMERA SECTION ADJUSTMENT

1-1. LIST OF SERVICING JIGS

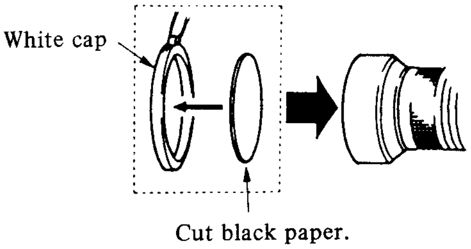
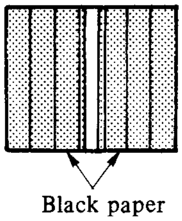
<table>
<tr><th>Ref No.</th><th>Name</th><th>Part Code</th><th>Use</th></tr>
<tr><td>J-1</td><td>Filter (W14)</td><td>J-6080-830-A</td><td>R Gain, B Gain Adjustment</td></tr>
<tr><td></td><td>Filter (C22)</td><td>J-6080-829-A</td><td>R Gain, B Gain Adjustment</td></tr>
<tr><td></td><td>Filter (For fine weather)</td><td>J-6080-058-A</td><td>MR2, MB2 Adjustment</td></tr>
<tr><td>J-2</td><td>ND Filter 0.4</td><td>J-6080-806-A</td><td>IRIS Adjustment</td></tr>
<tr><td></td><td>ND Filter 0.1</td><td>J-6080-807-A</td><td>LX Adjustment, IRIS Adjustment</td></tr>
<tr><td></td><td>ND Filter 1.0</td><td>J-6080-808-A</td><td>LX Adjustment, MAX Gain Adjustment</td></tr>
<tr><td></td><td>ND Filter 0.9</td><td>J-6080-833-A</td><td>MAX Gain Adjustment</td></tr>
<tr><td>J-3</td><td>Pattern box PTB-200 (For 190–240V ac)</td><td>J-6020-680-A</td><td></td></tr>
<tr><td>J-4</td><td>Pattern box colour chart</td><td>J-6020-250-A</td><td></td></tr>
<tr><td>J-5</td><td>Camera block fixing jig</td><td>J-6080-828-A</td><td></td></tr>
<tr><td>J-6</td><td>Extension cord A (8p)</td><td>J-6080-819-A</td><td></td></tr>
<tr><td></td><td>Extension cord B (9p)</td><td>J-6080-821-A</td><td></td></tr>
<tr><td colspan="3">Make the following jigs by yourself.
(1) Black cap
 </td><td>G Pedestal Adjustment (1), (2)
R. B Pedestal Adjustment
MPX Adjustment, Carrier Balance Adjustment
Setup Adjustment</td></tr>
<tr><td colspan="3">(2) High brightness pattern

Cover with black paper except 1/2 of the white width of the J-4 colour bar chart. Then photograph with a standard picture frame.</td><td>White Clip Adjustment (2)</td></tr>
</table>

Fig. 1-1

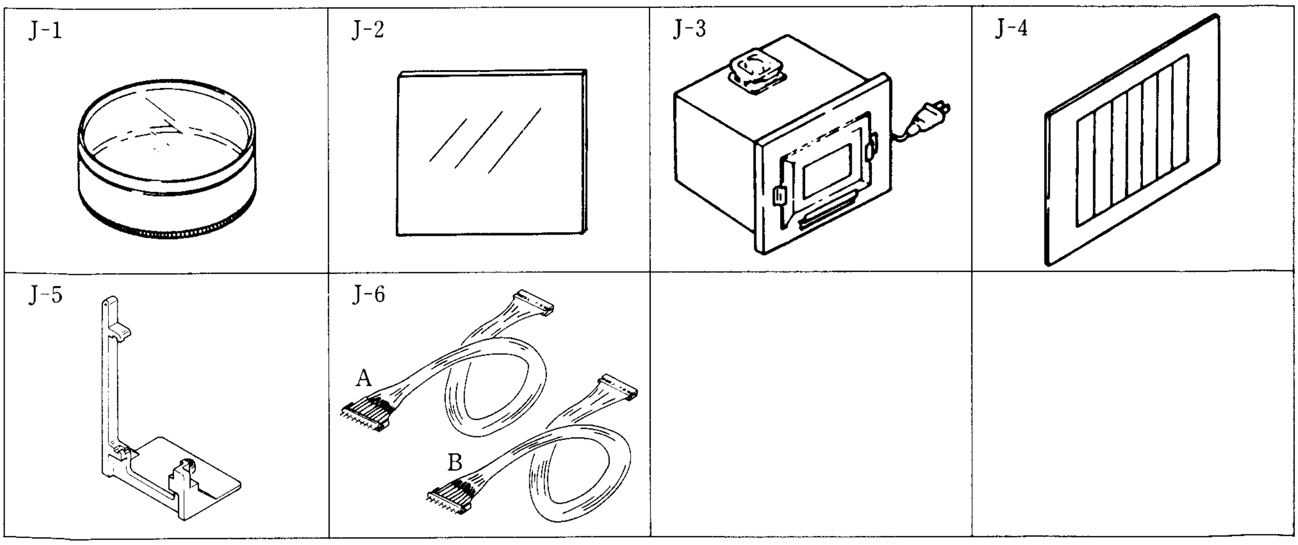


Fig. 1-2

1-2. PREPARATION

See **2. DISASSEMBLY** to remove cabinets and boards.

1) Set the white balance switch to ☼ (indoor) when not specified.
2) Change the entire monitor screen to white for the all-white pattern. (Remove the colour bar chart from the pattern box and rotate the zoom ring fully to the TELE side.

1-3. SETTING UP AND CONNECTION DIAGRAM

1) Set the camera section on the camera block fixing jig as shown in Fig. 1-3. (Insert Part Ⓐ and rotate in the arrow direction until it clicks.)

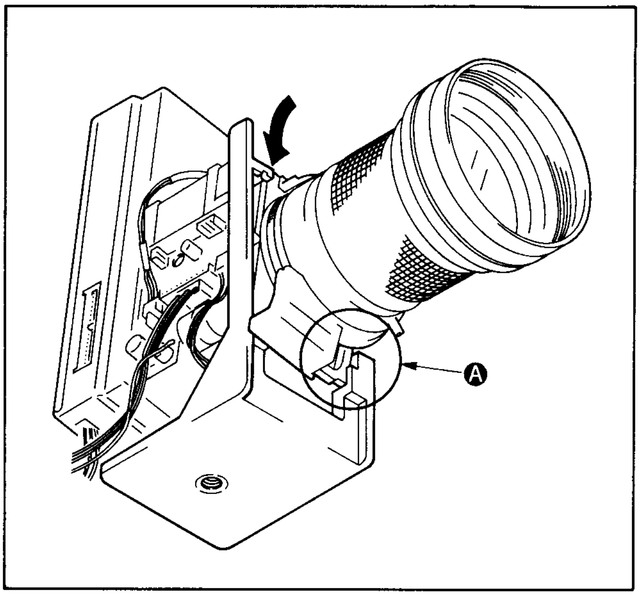


Fig. 1-3

2) Set up the camera block and pattern box as shown in Fig. 1-4.

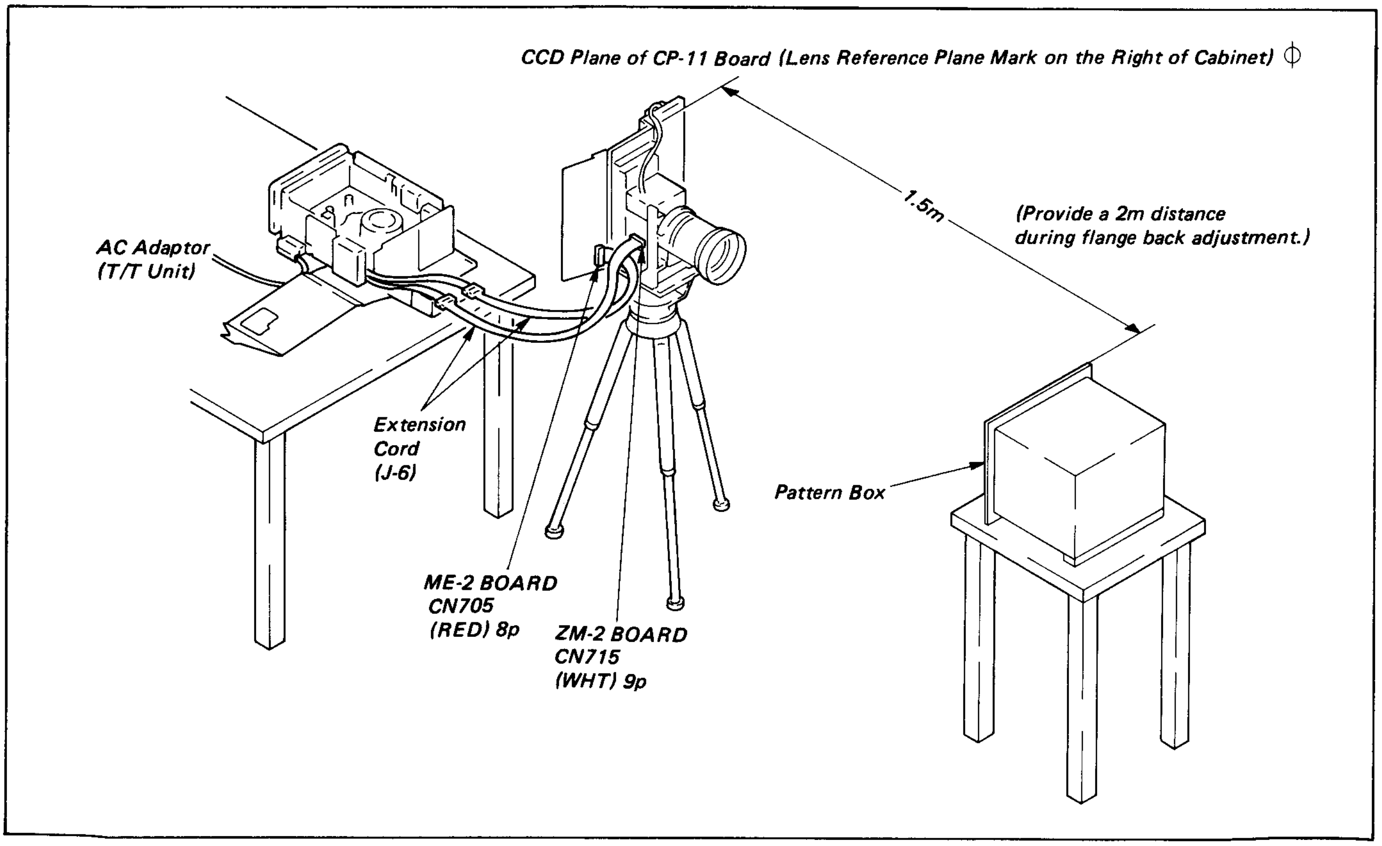

CCD Plane of CP-11 Board (Lens Reference Plane Mark on the Right of Cabinet) ⏀
1.5m
(Provide a 2m distance during flange back adjustment.)
AC Adaptor (T/T Unit)
Extension Cord (J-6)
Pattern Box
ME-2 BOARD CN705 (RED) 8p
ZM-2 BOARD CN715 (WHT) 9p

Fig. 1-4

3) Use a pan head as shown in Fig. 1-5 when setting up the camera block on a desk.

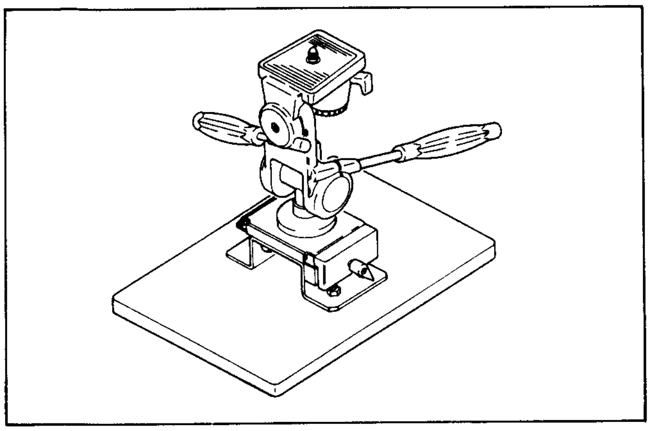
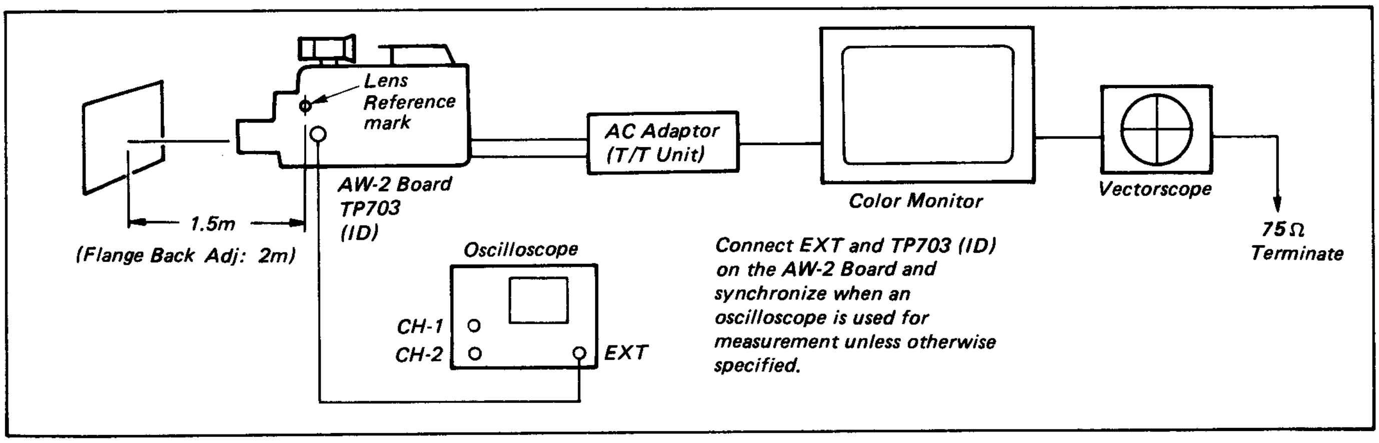


Fig. 1-5

4) Connection Diagram


Lens
Reference
mark
AC Adaptor
(T/T Unit)
Color Monitor
Vectorscope
75Ω
Terminate
AW-2 Board
TP703
(ID)
1.5m
(Flange Back Adj: 2m)
Oscilloscope
CH-1
CH-2
EXT

Connect EXT and TP703 (ID) on the AW-2 Board and synchronize when an oscilloscope is used for measurement unless otherwise specified.

Fig. 1-6

1-4. PRECAUTIONS

1) Adjust the picture frame as shown in Fig. 1-7 when using a colour bar chart for adjustment. (Standard picture frame)
2) See **2. DISASSEMBLY** to remove cabinets and boards.

STANDARD PICTURE FRAME

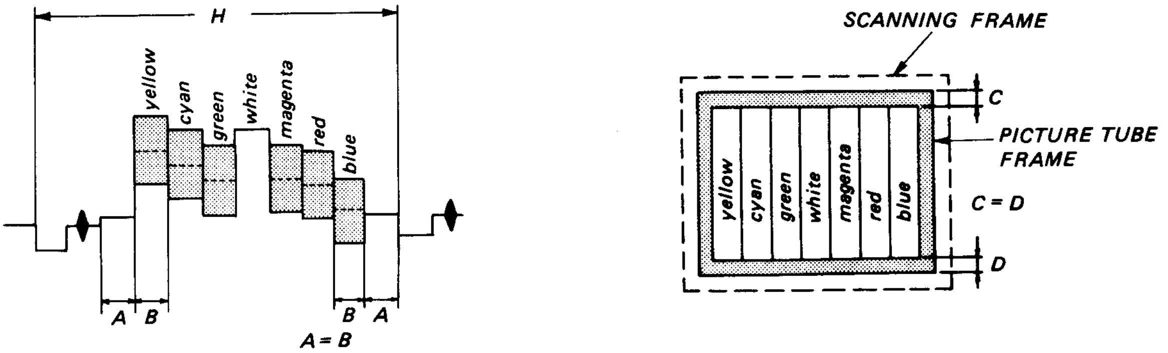

H
yellow
cyan
green
white
magenta
red
blue
A
B
B
A
A = B
SCANNING FRAME
C
PICTURE TUBE FRAME
C = D
D

Fig. a (camera output waveform of TP711 on ME-2 board)

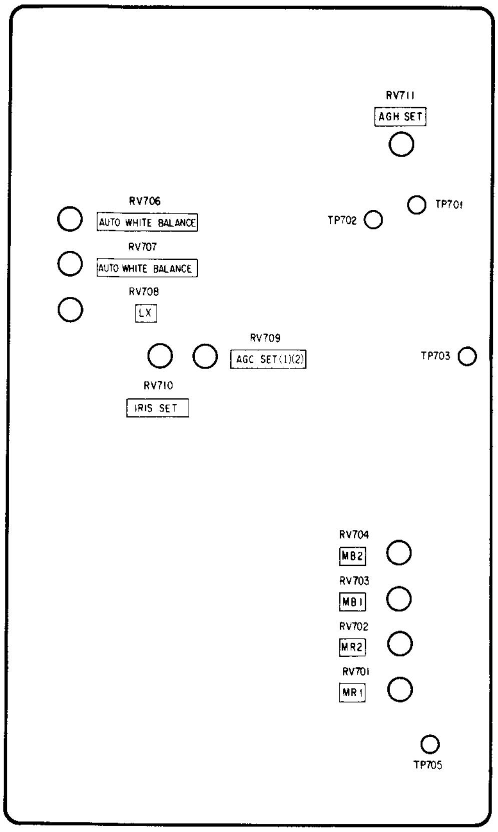
Fig. b (picture of TV monitor screen)

Adjust the zooming of camera and the tripod so that the output waveform of Fig. a and the picture of Fig. b can be obtain.

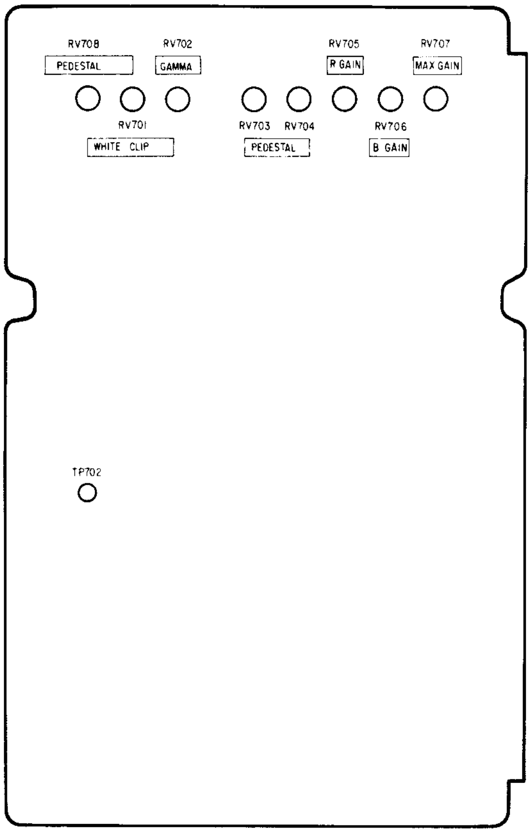
Fig. 1-7

1-5. RV AND TP LOCATION

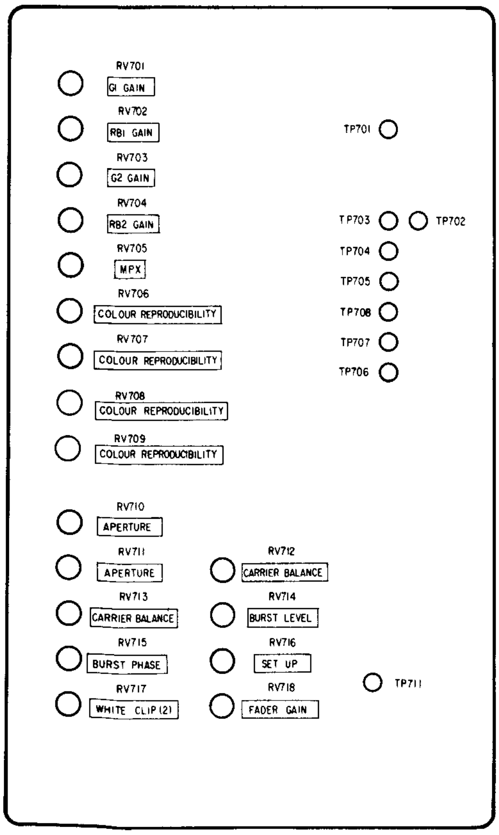
AW-2 BOARD (Component Side)


RV711
AGH SET
RV706
AUTO WHITE BALANCE
RV707
AUTO WHITE BALANCE
RV708
LX
TP702
TP701
RV709
AGC SET (1)(2)
TP703
RV710
IRIS SET
RV704
MB2
RV703
MB1
RV702
MR2
RV701
MR1
TP705

CP-11 BOARD (Component Side)


RV708
PEDESTAL
RV702
GAMMA
RV705
R GAIN
RV707
MAX GAIN
RV701
WHITE CLIP
RV703
RV704
PEDESTAL
RV706
B GAIN
TP702

ME-2 BOARD (Component Side)


RV701
G1 GAIN
RV702
RB1 GAIN
TP701
RV703
G2 GAIN
RV704
RB2 GAIN
TP703
TP702
TP704
RV705
MPX
TP705
RV706
COLOUR REPRODUCIBILITY
TP708
RV707
COLOUR REPRODUCIBILITY
TP707
TP706
RV708
COLOUR REPRODUCIBILITY
RV709
COLOUR REPRODUCIBILITY
RV710
APERTURE
RV711
APERTURE
RV712
CARRIER BALANCE
RV713
CARRIER BALANCE
RV714
BURST LEVEL
RV715
BURST PHASE
RV716
SET UP
TP711
RV717
WHITE CLIP (2)
RV718
FADER GAIN

1-6. FLANGE BACK ADJUSTMENT

Equipment: Siemens star
Allen wrenches (1.5mm and 3mm)
⊖ Screwdriver

Adjustment Method:

1) Photograph a Siemens star at a distance of 2m from the lens and align the centers of the monitor screen and of Siemens star.
2) Check that the lens zoom lever can be rotated fully to WIDE and TELE and rotate fully to the WIDE side. (Also check that the monitor screen is zooming.)
3) Set the lens focus ring index to the center, "2".

1.5 2 3
|

4) Loosen the hexagon socket set screw using an Allen wrench.
5) Move the rear lens using the ⊖ screwdriver. (Slide the rear lens screw mark.) (See Fig. 1-8.)

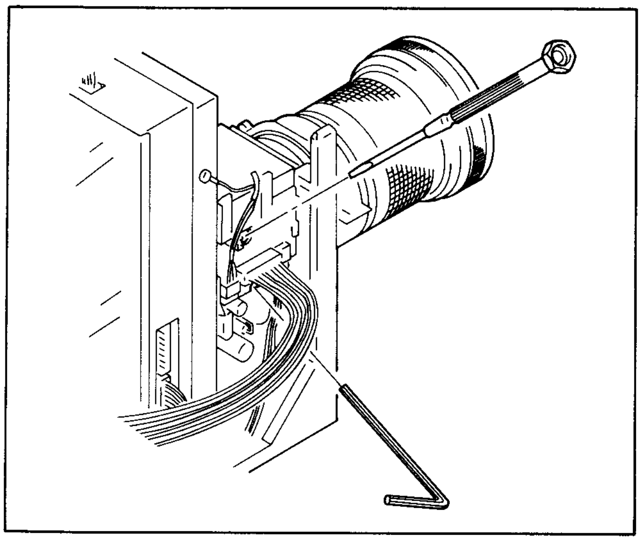


Fig. 1-8

6) Adjust by rotating the camera flange back adjusting pin two or three times right and left until a wedge in the center of the Siemens star becomes clearest while watching the monitor screen.

Note: Do not over-rotate the adjusting pin in one direction only.

7) Securely hold the flange back adjusting pin and tighten the hexagon socket set screw.
8) Set the zoom lever fully to TELE and rotate the focus ring. The position in which the wedge becomes most clear shall be in the range of the numeric "2".

5 7 10(ft)
1.5 2 3 (m)
→| |←

9) Set the zoom lever to WIDE and rotate the focus ring. The position in which the wedge becomes most clear shall be in the following range.

5 7 10(ft)
1.5 2 3 (m)
|←——→|

10) Securely hold the flange back adjusting pin not to rotate, tighten the hexagon socket set screw, then paint lock paint on the screw head.

1-7. IRIS ADJUSTMENT

Equipment: Oscilloscope
CP-11 Board TP701

Subject: Colour bar chart (standard picture frame: See Fig. 1-7 on page 187.)

Adjustment Method:

1) Rotate RV710 on the AW-2 Board and adjust the signal level to 155 ±5mVp-p. (When adjusting, adjust from high to low level.)
2) Cover an ND filter 0.5 in front of the lens.
3) Check that the signal level becomes 155 ±10mV when zoomed in case the ND filter 0.5 in front of the lens is removed. (See Fig. 1-9.)
4) Repeat Steps 1) to 3) until adjustment is made, if the result is not satisfactory.

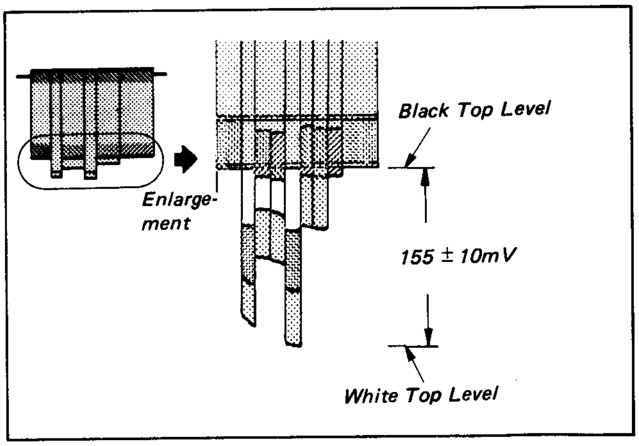


Fig. 1-9

Note: Backlight correction (iris) check up

1) Check that the signal level is 75 ±30mV when the IRIS selector switch is set to HIGH LIGHT.
2) Also check that the signal level is 210 ±40mV when set to BACK LIGHT.

1-8. AGC SETTING ADJUSTMENT

Equipment: Oscilloscope
AW-2 Board TP701

Subject: Colour bar chart (standard picture frame)

Adjustment Method.

Rotate RV709 on the AW-2 Board and adjust the signal level to 200 ±5mVp-p. (See Fig. 1-10.)

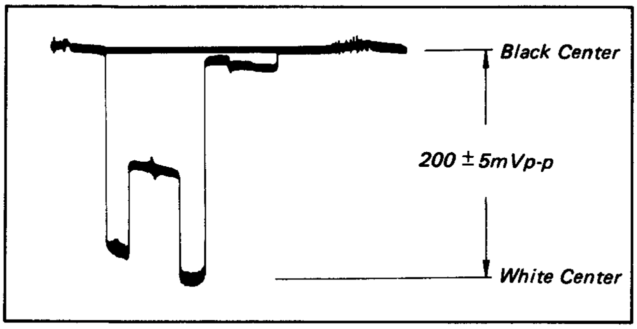


Fig. 1-10

1-9. AUTO WHITE BALANCE ADJUSTMENT (1)

Equipment: Oscilloscope
AW-2 Board CH1 TP701
CH2 TP702
MODE – ADD, POLARITY – INV

Subject: All white pattern

Adjustment Method:

1) Set the white balance switch to AUTO (☐)
2) Rotate RV706 and RV707 on the AW-2 Board and adjust the waveform to be linear. (See Fig. 1-11.)

Note: Press the auto white balance switch, check and adjust when rotating RV706 and RV707.

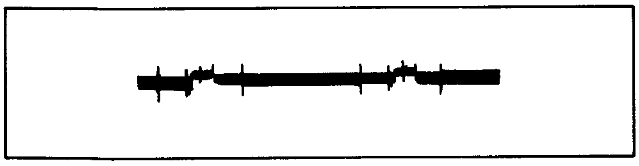


Fig. 1-11

1-10. G PEDESTAL ADJUSTMENT

Equipment: Oscilloscope
ME-2 Board TP701

Subject: All black (Cover a black cap on the lens.)

Adjustment Method:

1) Rotate RV701 and RV702 on the CP-11 Board counterclockwise and preset the output level to maximum.
2) Rotate RV708 on the CP-11 Board and temporarily adjust the pedestal level to 40 ±5mV. (See Fig. 1-12.)

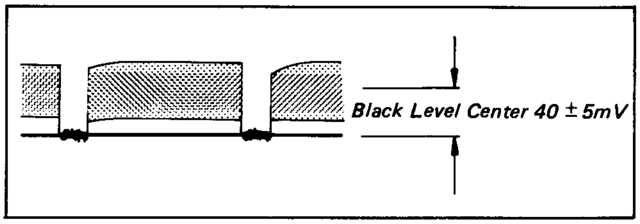


Fig. 1-12

1-11. GAMMA ADJUSTMENT

Equipment: Oscilloscope
ME-2 Board TP701

Subject: Colour bar chart (standard picture frame)

Adjustment Method.

Rotate RV702, which is preset in 1-10 G Pedestal Adjustment (1), on the CP-11 Board and adjust the signal level to 380 ±5mVp-p. (See Fig. 1-13.)

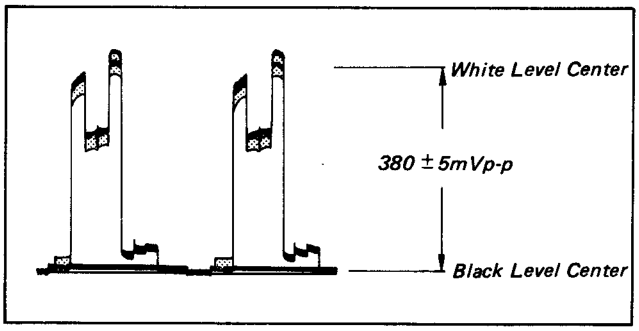


Fig. 1-13

1-12. WHITE CLIP ADJUSTMENT (1)

Equipment: Oscilloscope
ME-2 Board TP701

Subject: Colour bar chart (standard picture frame)

Adjustment Method:

Rotate RV701, which is preset in 1-10 G Pedestal Adjustment (1), on the CP-11 Board and adjust the signal level to 360 ±5mVp-p. (See Fig. 1-14.)

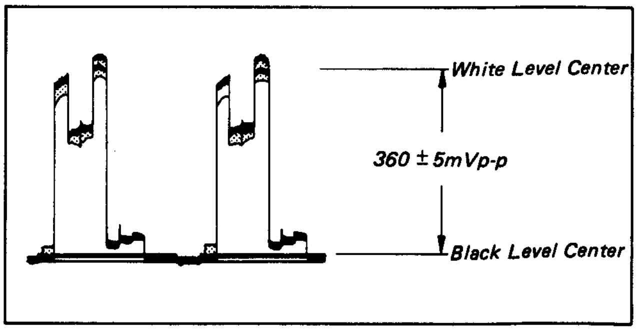


Fig. 1-14

1-13. G PEDESTAL ADJUSTMENT (2)

Equipment: Oscilloscope
ME-2 Board TP701

Subject: All black (Cover a black cap on the lens.)

Adjustment Method:

Rotate RV708 on the CP-11 Board and adjust the pedestal level to 25 ±5mV. (See Fig. 1-15.)

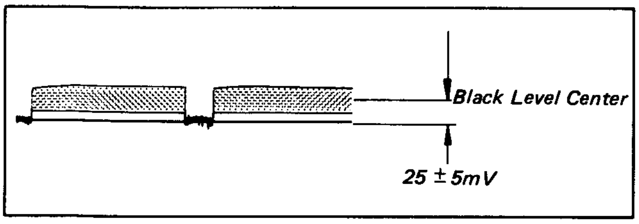


Fig. 1-15

1-14. R AND B PEDESTAL ADJUSTMENT

Equipment: Oscilloscope
ME-2 Board CH1 TP701
CH2 TP702
MODE – ADD, POLARITY – INV

Subject: All black (Cover a black cap on the lens.)

Adjustment Method.

Rotate RV703 and RV704 on the CP-11 Board and adjust the waveform to be linear. (See Fig. 1-16.)

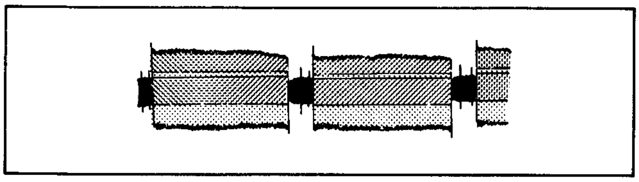


Fig. 1-16

1-15. MPX ADJUSTMENT (USE A VECTORSCOPE)

Equipment: Vectorscope

Subject: All black (Cover a black cap on the lens.)

Adjustment Method.

Rotate RV705 on the ME-2 Board and adjust until the black spots on the vectorscope become one dot. (See Fig. 1-17.)

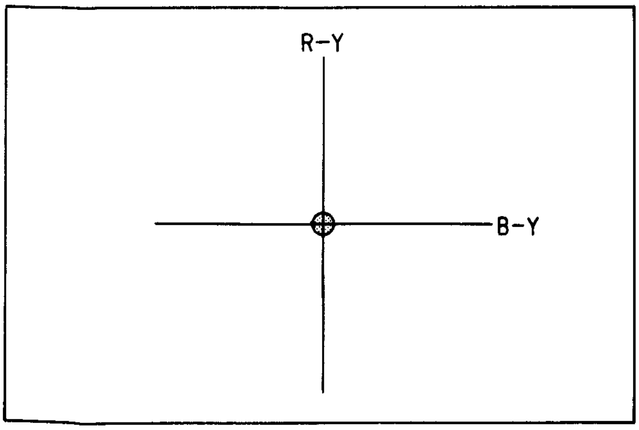


Fig. 1-17

1-16. CARRIER BALANCE ADJUSTMENT (USE A VECTORSCOPE)

Equipment: Vectorscope

Subject: All black (Cover a black cap on the lens.)

Adjustment Method:

1) Set the GAIN knob of the vectorscope to "MAX".
2) Rotate RV712 and RV713 on the ME-2 Board and adjust the black spot to the origin. (See Fig. 1-18.)

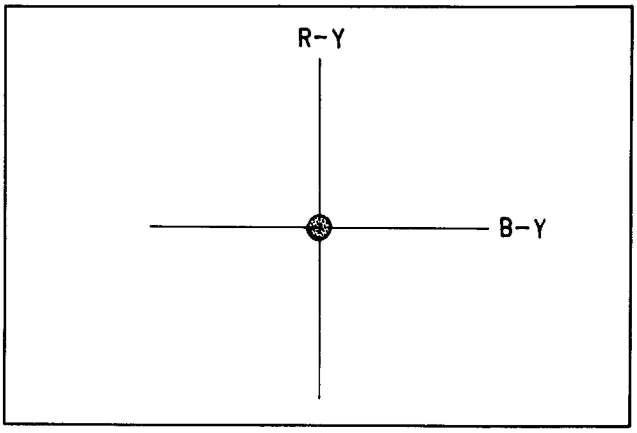


Fig. 1-18

3) Set the GAIN knob of the vectorscope to "CAL". Check that the black spot is located less than the origin ϕ2mm this time. (See Fig. 1-19.)

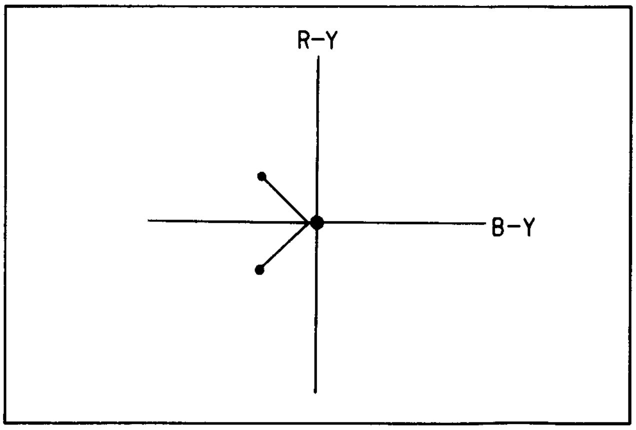


Fig. 1-19

1-17. G_1 AND G_2 GAIN ADJUSTMENT

Equipment: Oscilloscope
ME-2 Board (a) CH1 TP703(G_0)
CH2 TP704(G_1)
(b) CH1 TP703(G_0)
CH2 TP705(G_2)
MODE – ADD
POLARITY – INV

Subject: White pattern (See Fig. 1-20.)

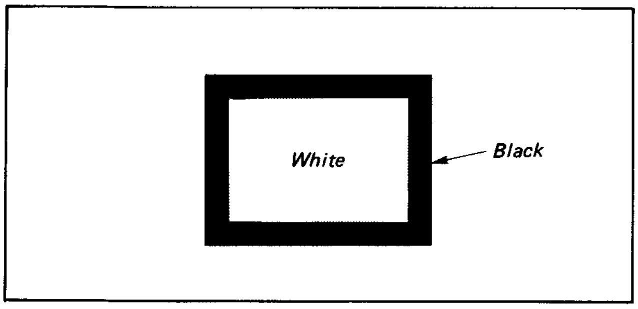


Fig. 1-20

Adjustment Method:

1) Set the oscilloscope probe to (a) and rotate RV701 on the ME-2 Board until the waveform becomes linear. (See Fig. 1-21.)
2) Set the oscilloscope probe to (b) and rotate RV703 on the ME-2 Board until the waveform becomes linear. (See Fig. 1-21.)

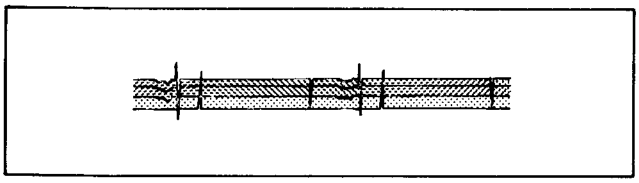


Fig. 1-21

1-18. RB_1 AND RB_2 GAIN ADJUSTMENT

Equipment: Oscilloscope
ME-2 Board (a) CH1 TP706(RB_0)
CH2 TP707(RB_1)
(b) CH1 TP706(RB_0)
CH2 TP707(RB_2)
MODE – ADD
POLARITY – INV

Subject: White pattern (See Fig. 1-20.)

Adjustment Method:

1) Set the oscilloscope probe to (a) and rotate RV702 on the ME-2 Board until the waveform becomes linear. (See Fig. 1-22.)
2) Set the oscilloscope probe to (b) and rotate RV704 on the ME-2 Board until the waveform becomes linear. (See Fig. 1-22.)

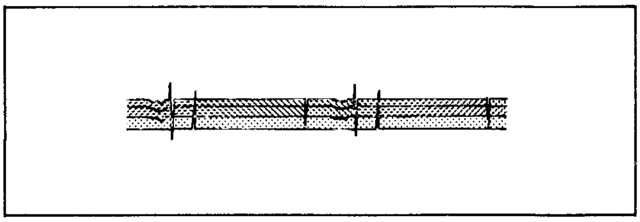


Fig. 1-22

1-19. FADER GAIN ADJUSTMENT

Equipment: Oscilloscope
ME-2 Board TP711

Subject: Colour bar chart (Standard picture frame)

Adjustment Method:

Rotate RV718 on the ME-2 Board and adjust the signal level to 335 $^{+0}_{-10}$mV. (See Fig. 1-23.)

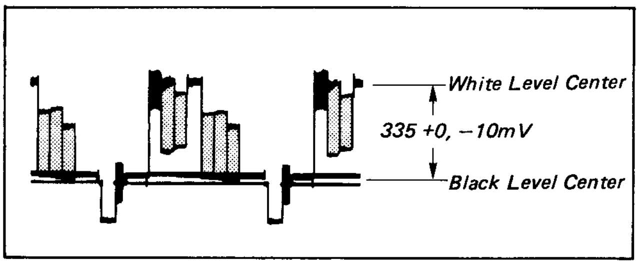


Fig. 1-23

1-20. SETTING ADJUSTMENT

Equipment: Oscilloscope
ME-2 Board TP711

Subject: All black (Cover a black cap on the lens.)

Adjustment Method:

Rotate RV716 on the ME-2 Board and adjust the signal level to 15 ±5mV. (See Fig. 1-24.)

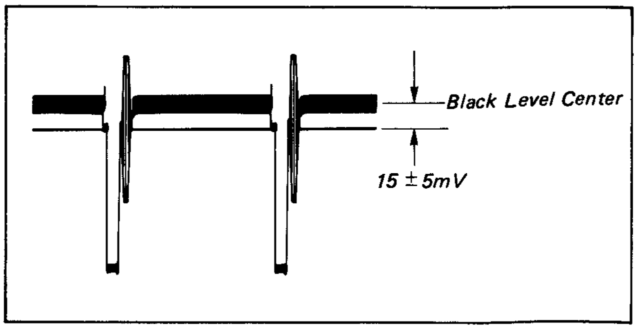


Fig. 1-24

1-21. APERTURE ADJUSTMENT

Equipment: Oscilloscope
ME-2 Board TP711

Subject: Colour bar chart (Standard picture frame)

Adjustment Method:

1) Preset RV710 and RV711 on the ME-2 Board as shown in Fig. 1-25.

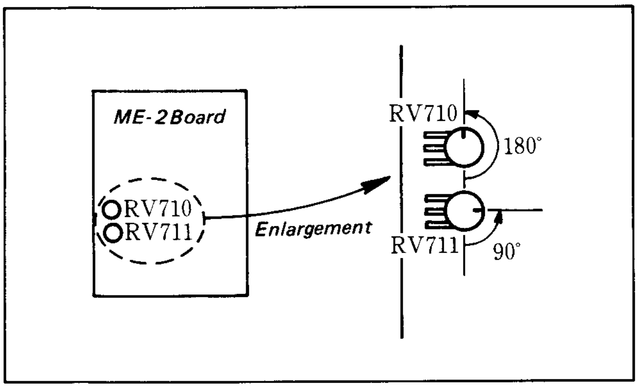

ME-2Board
RV710
RV711
Enlargement
RV710
180°
RV711
90°

Fig. 1-25

2) Focus correctly and move the camera right and left slightly. Fix the camera when the aperture becomes maximum.
3) Rotate RV711 on the ME-2 Board and adjust the aperture level between white and magenta to 90 ±10mV. (See Fig. 1-26.)
4) Rotate RV710 on the ME-2 Board and adjust the aperture level between white and magenta to 40 ±10mV. (See Fig. 1-26.)

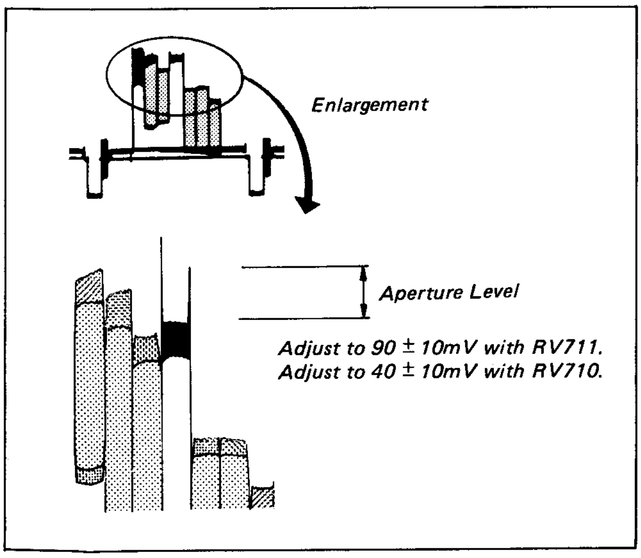

Enlargement
Aperture Level
Adjust to 90 ± 10mV with RV711.
Adjust to 40 ± 10mV with RV710.

Fig. 1-26

1-22. WHITE CLIP ADJUSTMENT (2)

Equipment: Oscilloscope
ME-2 Board TP711

Subject: High brightness pattern

Adjustment Method:

1) Rotate RV717 on the ME-2 Board and adjust the signal level to 420 ±10mV. (See Fig. 1-27.)

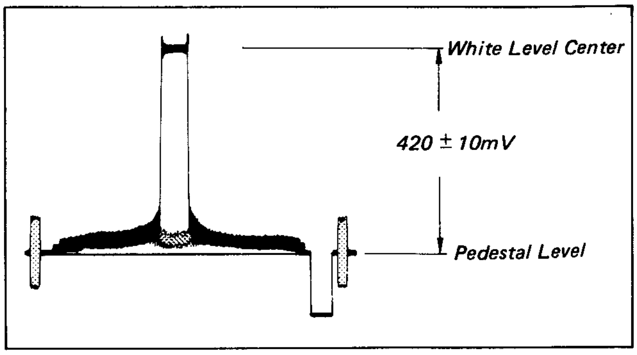

White Level Center
420 ± 10mV
Pedestal Level

Fig. 1-27

2) Repeat adjusting and checking until the fader gain, setting up, and white clip adjustments meet the required levels.

1-23. AUTO WHITE BALANCE ADJUSTMENT (2) (USE A VECTORSCOPE)

Equipment: Vectorscope

Subject: All white pattern

Adjustment Method:

1) Set the white balance switch to "AUTO" (☐).
2) Set the vectorscope GAIN knob to "MAX".
3) Rotate RV706 and RV707 on the AW-2 Board and adjust the center of the white spot on the vectorscope to the origin. (See Fig. 1-28.)

Note: Press the white balance switch, check and adjust for when rotating RV706 and RV707.

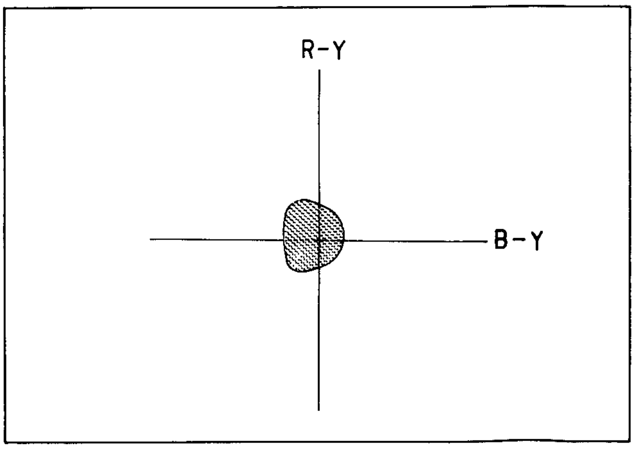


Fig. 1-28

1-24. MAX GAIN ADJUSTMENT

Equipment: Oscilloscope
ME-2 Board TP711

Subject: Colour bar chart (Standard picture frame)

Adjustment Method:

1) Set the white balance switch to AUTO ( ) and press once.
2) Cover an ND filter 1.9 in front of the lens.
3) Adjust the waveform value to 175 ±10mV with RV707 on the CP-11 Board. (See Fig. 1-29.)

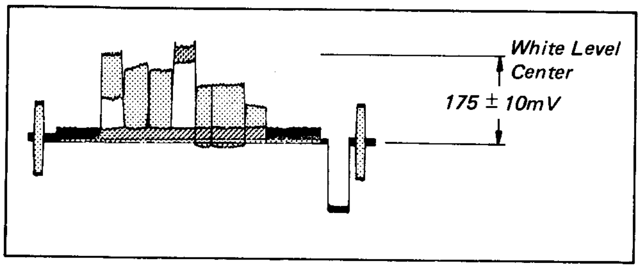


Fig. 1-29

1-25. AGC SET ADJUSTMENT (2)

Equipment: Oscilloscope
AW-2 Board TP701

Subject: Colour bar chart (Standard picture frame)

Adjustment Method:

Adjust the waveform value to 200 ±5mVp-p with RV709 on the AW-2 Board. (See Fig. 1-30.)

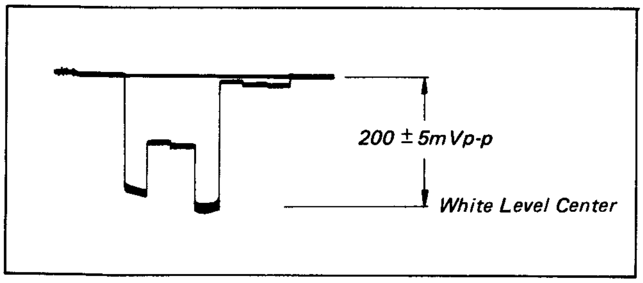


Fig. 1-30

1-26. AGH SET ADJUSTMENT

Equipment: Oscilloscope
ME-2 Board TP711

Subject: All white pattern

Adjustment Method.

1) Set the IRIS selector switch to "BACK LIGHT".
2) Rotate RV711 on the AW-2 Board to adjust the waveform to 350 ±20mV. (See Fig. 1-31.)

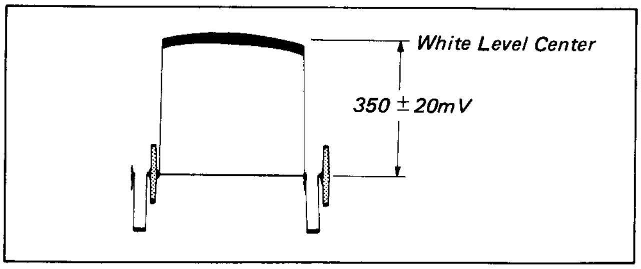


Fig. 1-31

3) Set the IRIS selector switch to "HIGH LIGHT" and check that the waveform is 100 ±30mV.

1-27. LX ADJUSTMENT

Subject: All white pattern (Zoom lever position: Standard picture frame)

Adjustment Method:

1) Cover an ND filter 2.0 in front of the lens and wait 2 or 3 seconds.
2) Rotate RV708 on the AW-2 Board, light the LX lamp (EVF), thereafter extinguish it.
3) Exchange with an ND filter 2.1 and check that the LX lamp (EVF) lights in less than 3 seconds.
4) Check that the lamp extinguishes with an ND filter 2.0 and lights with an ND filter 2.1. Repeat adjusting and checking if not satisfactory.

Note: The lens sensitivity changes depending on the zoom position. Do not move the zoom ring when making an adjustment.

1-28. COLOUR REPRODUCIBILITY ADJUSTMENT (USE A VECTORSCOPE)

Equipment: Vectorscope (NTSC mode)

Subject: Colour bar chart (Standard picture frame)

Adjustment Method:

1) Set the white balance switch to "AUTO" ( ).
2) Rotate RV706, RV707, RV708, and RV709 on the ME-2 Board and place the six colour spots inside their standard frames. (See Fig. 1-32.)

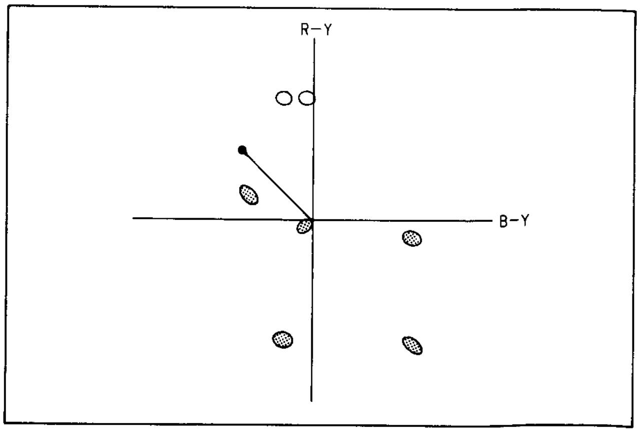


Fig. 1-32

1-29. BURST PHASE ADJUSTMENT

Equipment: Vectorscope (NTSC mode)

Subject: Colour bar chart (Standard picture frame)

Adjustment Method:

1) Burst signals are made to intermingle with each otther by the vectorscope PHASE adjustment knob.
2) Rotating ME-2 board RV715, adjust the Burst phase to become 135° ±2°.

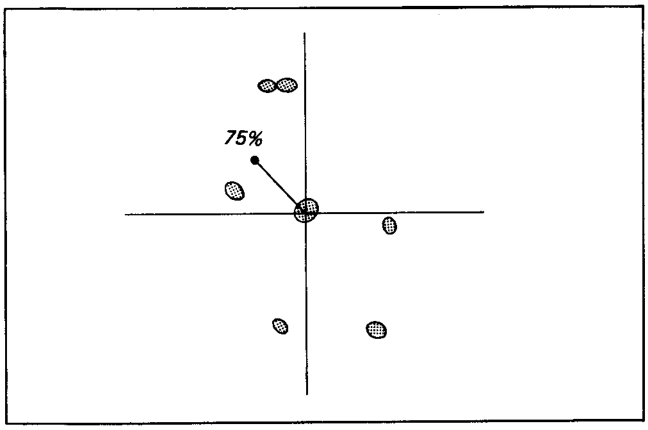


Fig. 1-33

1-30. BURST GAIN ADJUSTMENT (USE A VECTORSCOPE)

Equipment used: Vectorscope (NTSC mode)

Subject: Colour bar chart (standard picture frame)

Adjustment method:

Adjust the burst level center to less than ±1mm of burst position on scale 75% using RV714 of the ME-2 Board.

Note: Adjust the value between two different levels of the white spot so that it becomes the burst position on scale 75%, when these two levels are not the same. (See Fig. 1-33.)

1-31. R AND B GAIN ADJUSTMENTS (USE A VECTORSCOPE)

Equipment used: Vectorscope

Subject: White pattern

Adjustment method:

1) Set the white balance switch to AUTO (☑).
2) Preset RV705 on the CP-11 Board to the mechanical center. (See Fig. 1-34.)

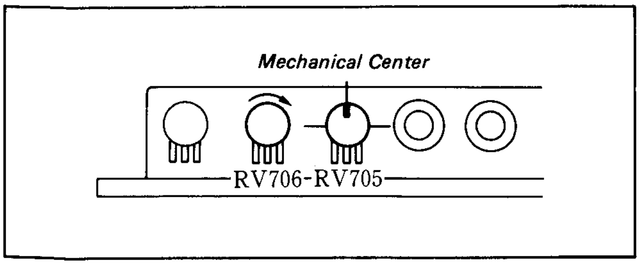


Fig. 1-34

3) Rotate RV706 on the CP-11 Board clockwise and preset so that the white spot on the vector moves to left fully.
4) Place a filter W14 in front of the lens, press the auto white balance swtich, and check that the white spot is slided left from the R-Y axis. (See Fig. 1-35.)

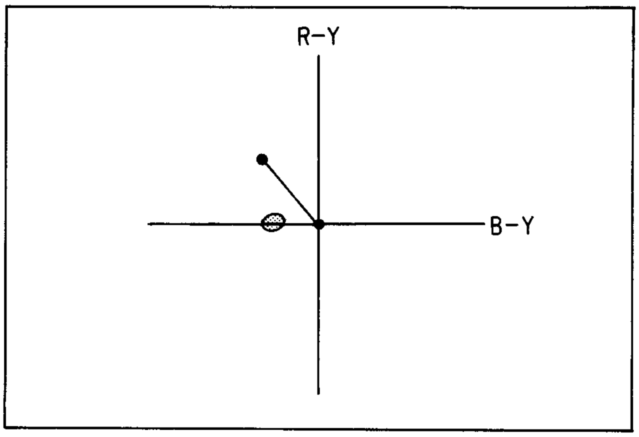


Fig. 1-35

5) Rotate RV706 counterclockwise and move the white spot to the origin.
6) Press the white balance switch.
7) Check that the white spot is less than 3ϕ from the origin and that the white balance alarm lamp inside EVF is not flashing.
   Rotate RV706 slightly counterclockwise and repeat Steps 6) and 7) if either one of these two conditions is not met.
8) Press the white balance switch and check that the white spot is less than 3ϕ from the origin and that the white balance alarm lamp inside EVF is not flashing.
9) Rotate RV705 clockwise and preset so that the white spot moves to lower right fully.
10) Change the filter to a C22 filter. Check that the white spot is slided under the B-Y axis when the white balance switch is pressed. (See Fig. 1-36.)

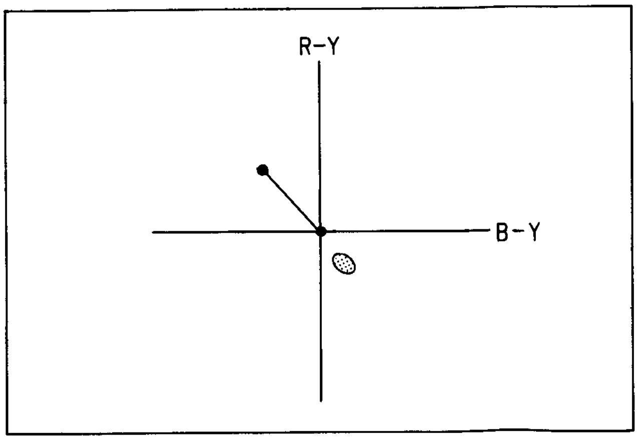


Fig. 1-36

11) Rotate RV705 counterclockwise and move the white spot closer to the origin.
12) Press the white balance switch.
13) Repeat Steps 11) and 12) and adjust so that the white spot is located less than 3ϕ from the origin and that the white balance alarm lamp inside EVF is extinguished.
14) Rotate RV705 counterclockwise further to place the white spot 4.0 ±0.5mm upper left of the origin. Then push the white balance switch and check that the white spot is located less than 3ϕ from the origin and that white balance alarm lamp inside EVF is not flashing either. (See Fig. 1-37.)

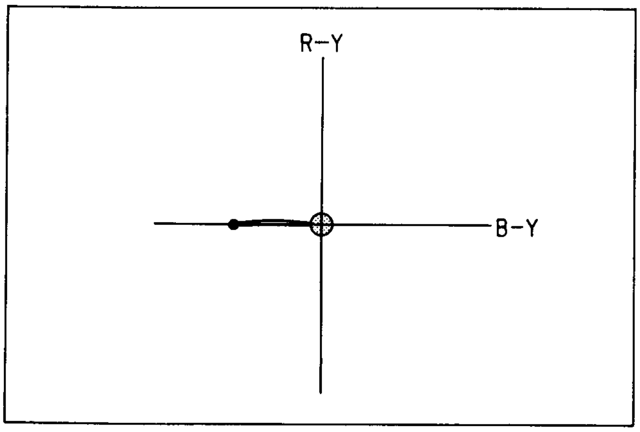


Fig. 1-37

1-32. MR$_1$ AND MB$_1$ ADJUSTMENT (USE A VECTORSCOPE)

Equipment: Vectorscope

Subject: Colour bar chart (Standard picture frame)

Adjustment Method:

1) Set the white balance switch to (💡).
2) Set the vectorscope GAIN knob to "MAX".
3) Rotate RV701 and RV703 on the AW-2 Board and adjust the white spot on the vectorscope to be placed on the origin. (See Fig. 1-38.)
4) Set the vectorscope GAIN knob to CAL.
At that time check that the white spot is within ϕ1mm distance from the center of the origin.

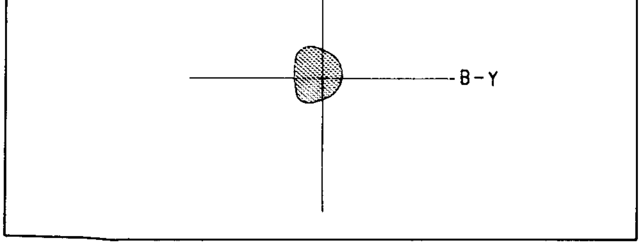


Fig. 1-38

1-33. MR$_2$ AND MB$_2$ ADJUSTMENT (USE A VECTORSCOPE)

Equipment: Vectorscope

Subject: Colour bar chart (standard picture frame)

Adjustment Method:

1) Set the white balance switch to (☼).
2) Cover a filter for fine weather in front of the lens.
3) Set the vectorscope GAIN knob to "MAX".
4) Rotate RV702 and RV704 on the AW-2 Board to align the white spot on the vectorscope to a position approximately 2mm below the origin on the R-Y axis. (See Fig. 1-39.)

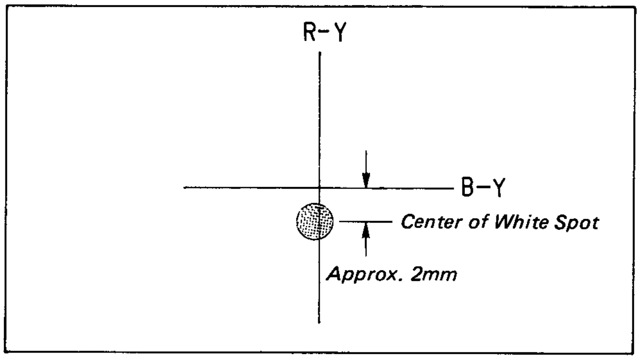


Fig. 1-39

1-34. VIDEO OUT SIGNAL CONFIRMATION

Equipment: Oscilloscope
ME-2 Board TP711

Subject: Colour bar chart (Standard picture frame)

Checking Method:

1) After making all the required adjustments, check that the signal level is ≦ 580mVp-p. (See Fig. 1-40.)
2) Check and adjust the MAX gain and color reproducibility when the signal level is higher than 580mV p-p.

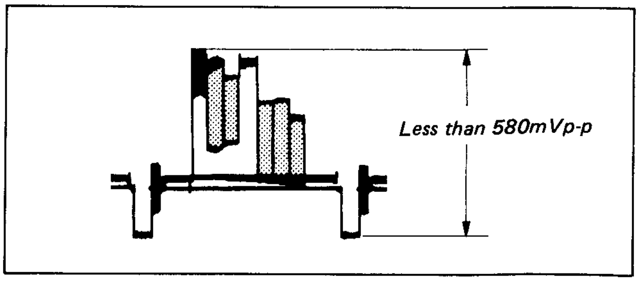


Fig. 1-40

2. MECHANISM SECTION ADJUSTMENT (VIDEO SECTION)

2-1. PREPARATION ITEMS FOR MECHANISM SECTION CHECKING, ADJUSTMENT AND REPLACEMENT

See **2. DISASSEMBLY** to remove cabinets and boards.

2-1-1. Opening Control Panel

1) Disengage the strap mounting metal fittings on both right and left sides of the control panel ❷ from two clicks ❶ .
2) Disengage the click ❸ and open the control panel with the printed circuit board toward the arrow Ⓐ . (You will hear a tearing sound, but this causes no problem.) (See Fig. 2-1.)

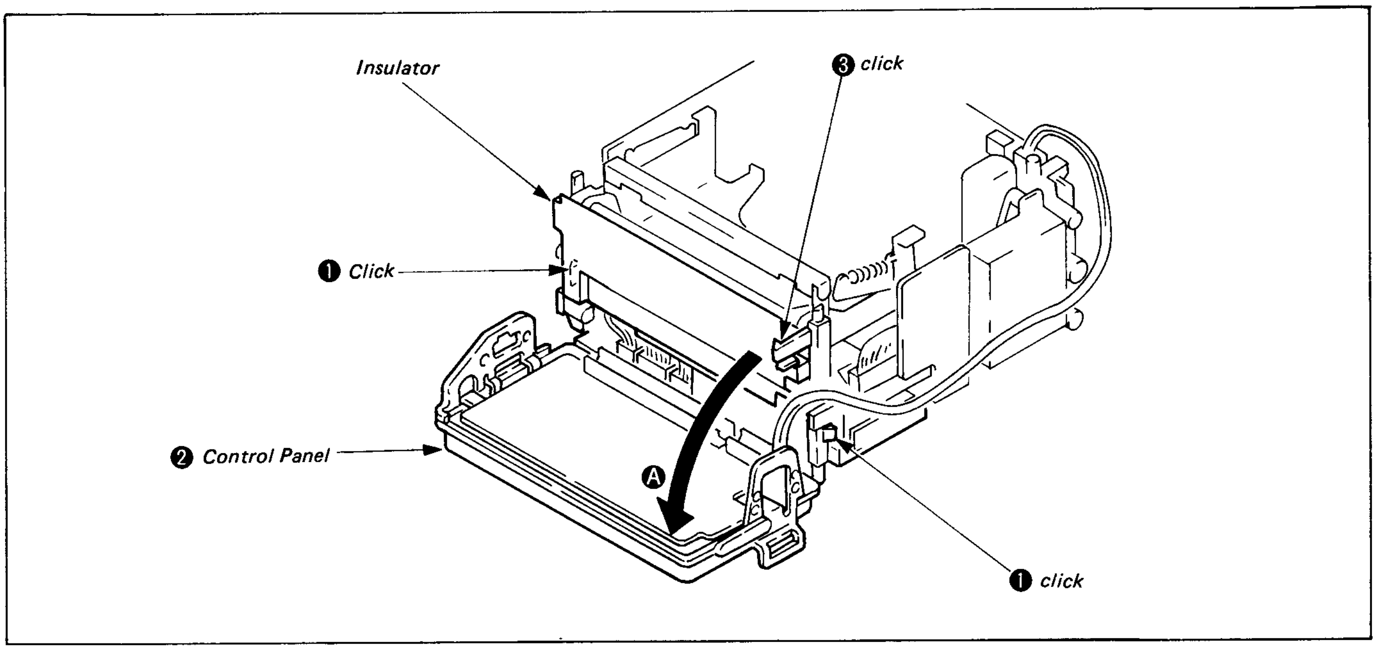

Insulator
❸ click
❶ Click
❷ Control Panel
Ⓐ
❶ click

Fig. 2-1

2-1-2. Opening HS-5 Board and DC·DC Converter

1) Remove the screw ❶ .
2) Open the HS-5 Board ❷ toward the arrow Ⓐ . (You will hear a tearing sound, but this causes no problem.)
3) Disengage the click ❸ and open the DC·DC converter ❹ in the arrow Ⓑ direction. (You will hear a tearing sound, but this causes no problem.)

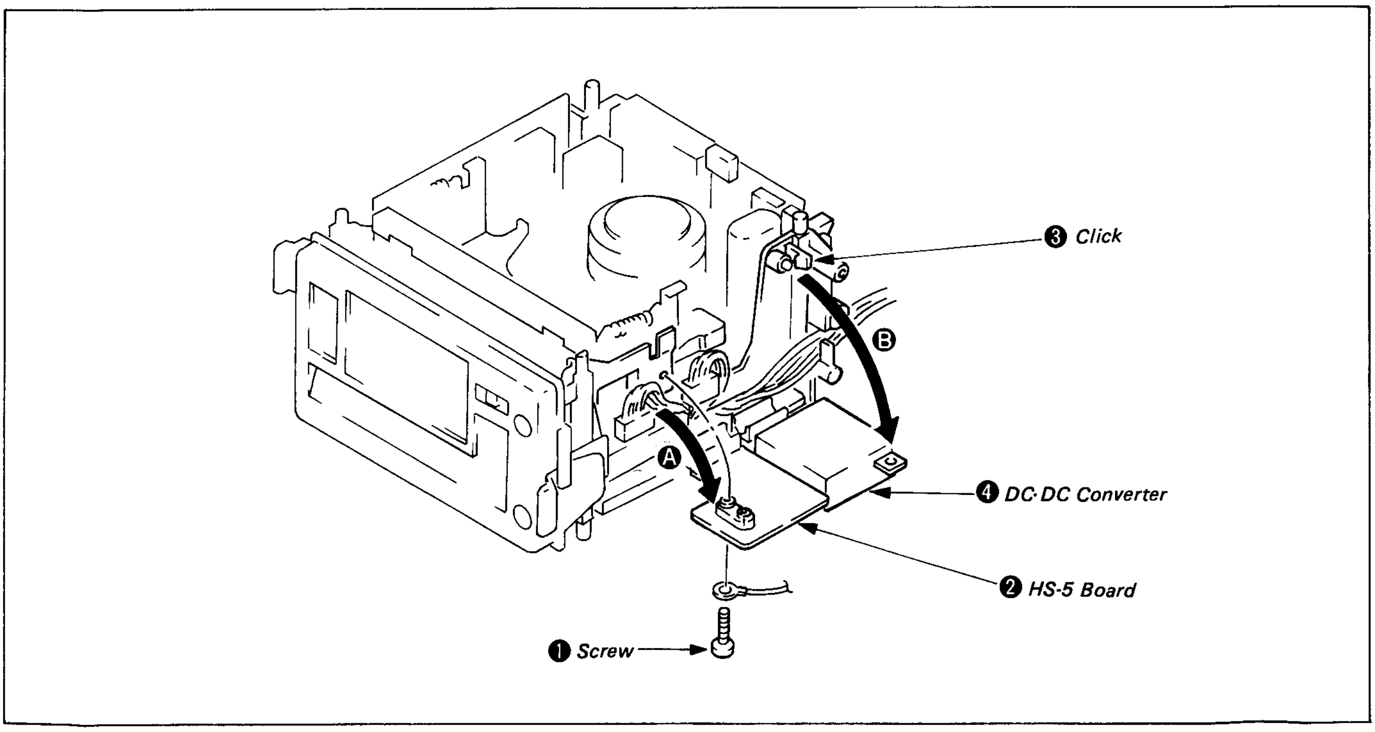

❸ Click
Ⓑ
Ⓐ
❹ DC·DC Converter
❷ HS-5 Board
❶ Screw

Fig. 2-2

2-1-3. Opening AR-2 Board

1) Disengage two clicks ❶ .
2) Open the AR-2 Board ❷ toward the arrow Ⓐ . (You will hear a tearing sound, but this causes no problem) (See Fig. 2-3.)

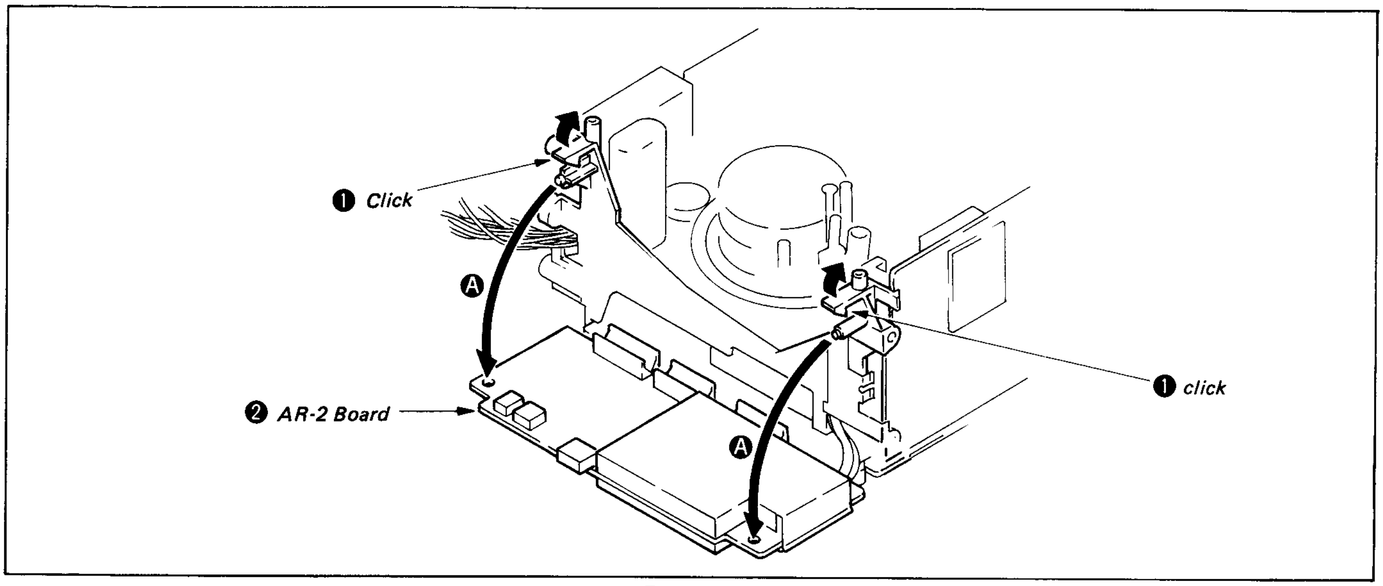

❶ Click
Ⓐ
❷ AR-2 Board
Ⓐ
❶ click

Fig. 2-3

2-1-4. Opening VI-7 Board

1) Open the control panel as instructed in 2-1-1.
2) Open the HS-5 Board and DC·DC converter as instructed in 2-1-2.
3) Open the AR-2 Board as instructed in 2-1-3.
4) Remove two screws ❶ and the multiconnector cover ❷.
5) Disconnect the connector ❸ .
6) Remove the screw ❹ .
7) Disengage two clicks ❺ from the VI-7 Board ❻ .
8) Open the mechanism section ❼ toward the arrow Ⓐ . (See Fig. 2-4.)

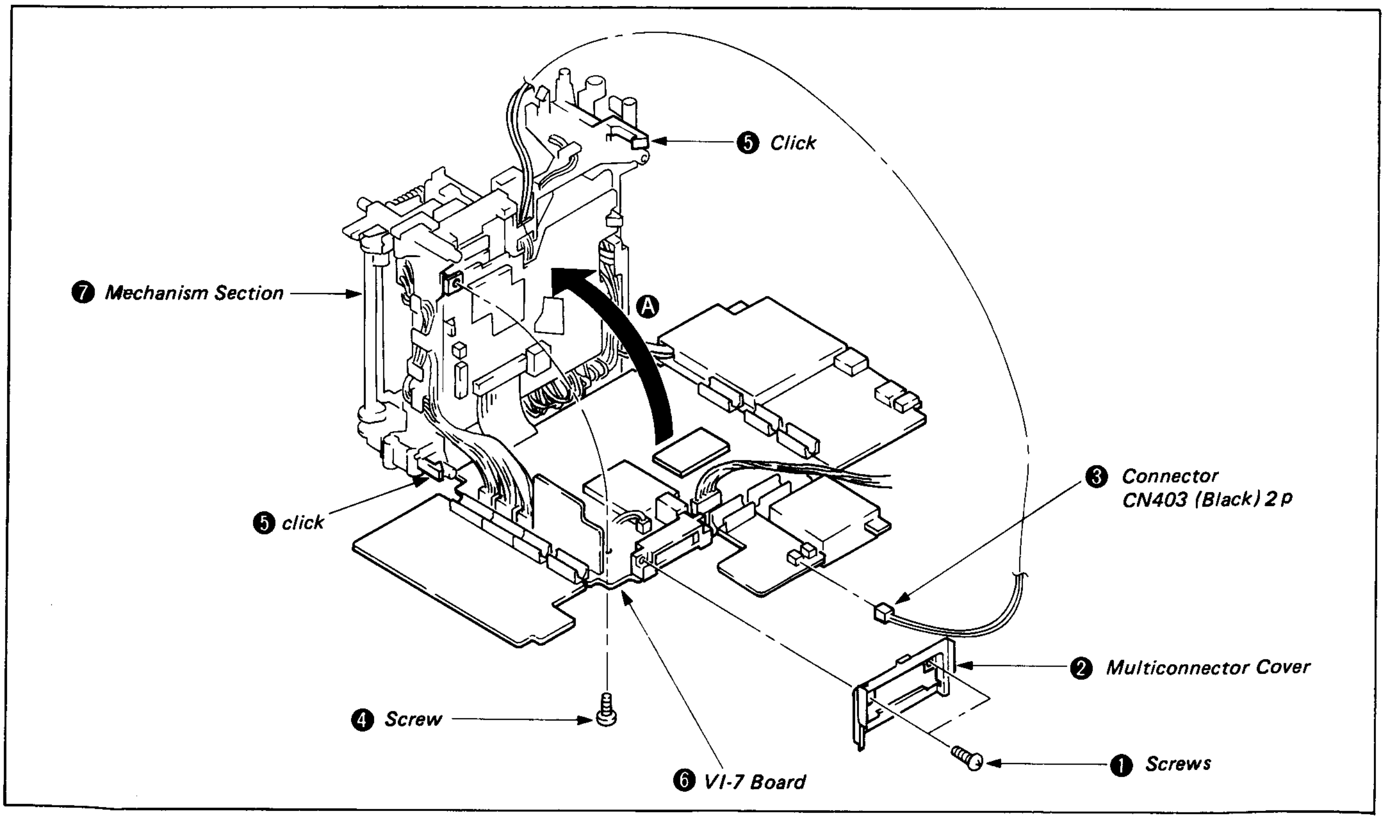

❺ Click
❼ Mechanism Section
Ⓐ
❺ click
❸ Connector CN403 (Black) 2P
❷ Multiconnector Cover
❹ Screw
❶ Screws
❻ VI-7 Board

Fig. 2-4

2-1-5. Opening MC-8 Board

1) Open the VI-7 Board as instructed in 2-1-4.
2) Disengage two clicks ❶ .
3) Disconnect the connector ❷ .
4) Open the MC-8 Board ❸ toward the arrow Ⓐ . (See Fig. 2-5.)

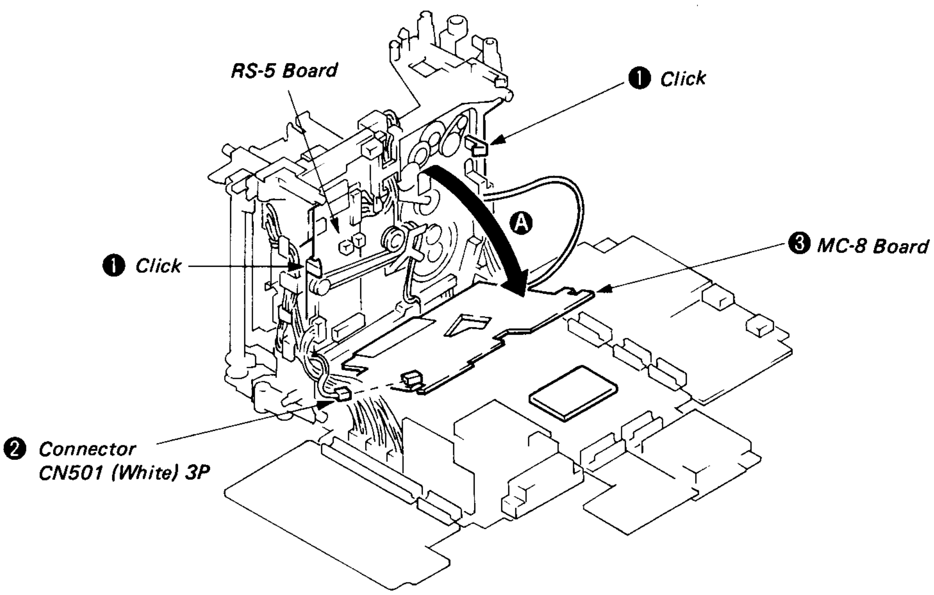

RS-5 Board
❶ Click
❶ Click
Ⓐ
❸ MC-8 Board
❷ Connector
CN501 (White) 3P

Fig. 2-5

2-1-6. Cassette Compartment Assembly

1. Removal

1) Remove the screw ❶ and open the HS-5 Board ❷ . (You will hear a tearing sound, but this causes no problem.)
2) Remove the screw ❸ and open the SV-14 Board ❹ .
3) Remove the screw ❺ and leaf switch (S901) ❻ .
4) Remove four screws ❼ and cassette compartment assembly ❽ . (See Fig. 2-6.)

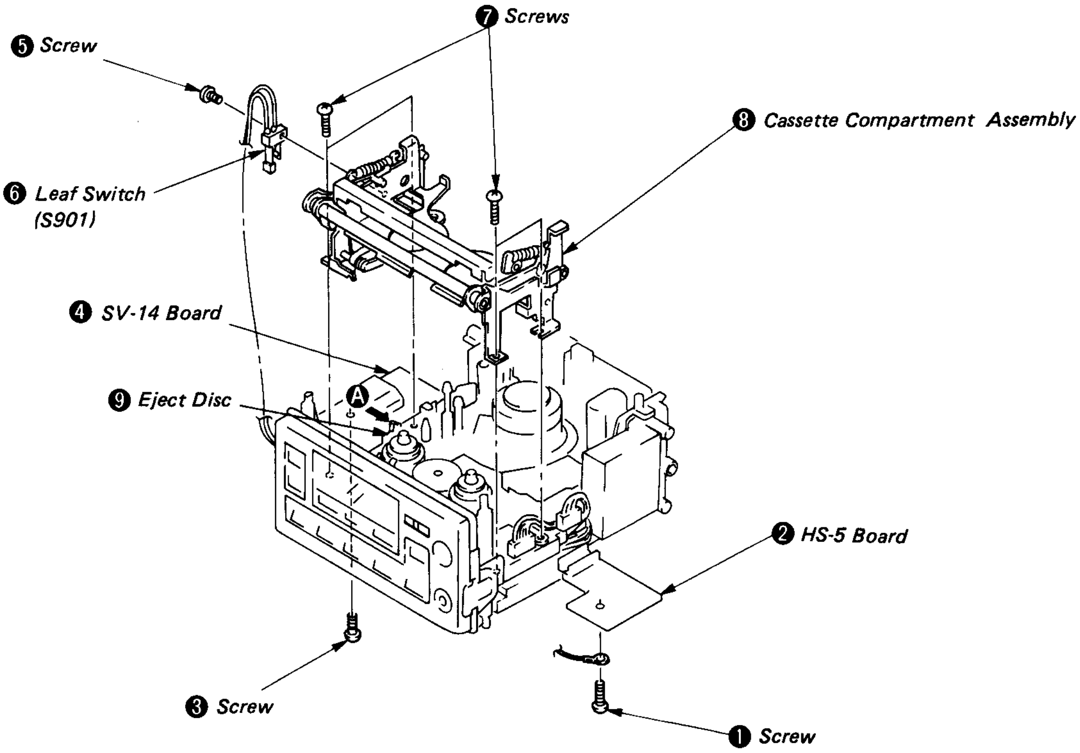

❼ Screws
❺ Screw
❽ Cassette Compartment Assembly
❻ Leaf Switch
(S901)
❹ SV-14 Board
❾ Eject Disc
Ⓐ
❷ HS-5 Board
❸ Screw
❶ Screw

Fig. 2-6

2. Remounting

1) Remount the cassette compartment assembly ❽ and tighten the screw ❼ referring to Fig. 2-7. (Push the eject disc ❾ toward the arrow Ⓐ to avoid the disc hitting the cassette compartment assembly.) (See Fig. 2-6.)
2) Remount the leaf switch (S901) ❻ with a screw ❺. (See Fig. 2-6.)
3) Remount the SV-14 Board ❹ with a screw ❸. (See Fig. 2-6.)
4) Remount the HS-5 Board ❷ with a screw ❶. (See Fig. 2-6.)

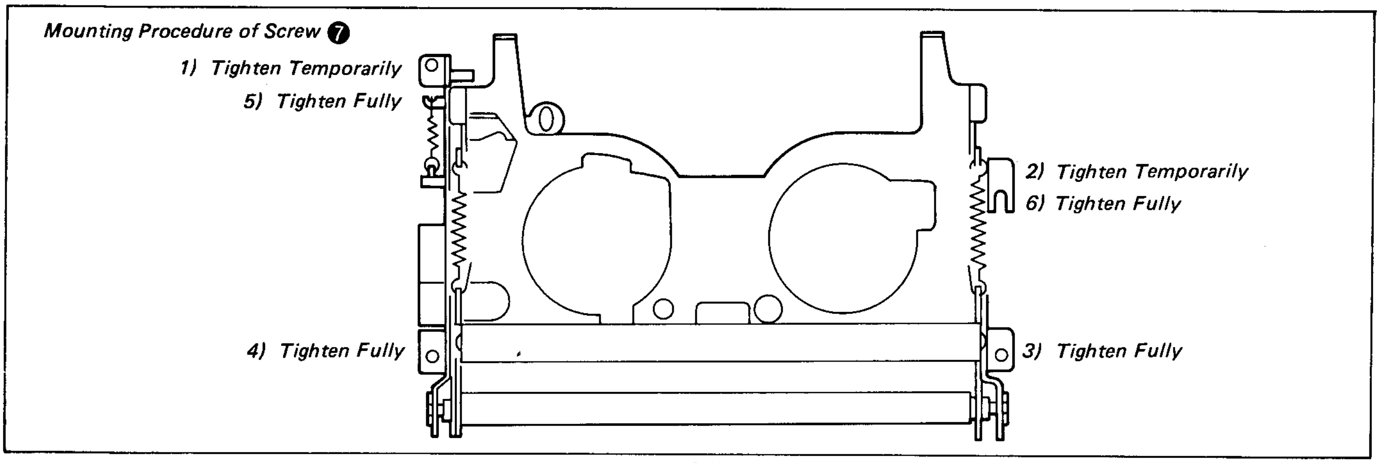

Mounting Procedure of Screw ❼
1) Tighten Temporarily
5) Tighten Fully
2) Tighten Temporarily
6) Tighten Fully
4) Tighten Fully
3) Tighten Fully

Fig. 2-7

2-1-7. Operating without Cassette Compartment Assembly and Tape

Note: Be care that the set may not operate if there is a strong light source near the set.
Turn off power, then turn on when the eject lamp flashes.

1. Loading

1) Connect the power supply ❶ and turn on power.
2) Place a tape on the pin of the RECOG SW assembly ❷.
3) Turn on the leaf switch (S901) ❸. (See Fig. 2-8.)

2. Play back

1) Take the steps required in 1.
2) Place a rubber band ❹ between the S and T reels.
3) Cover a cap ❺ on the LED assembly.
4) Press the PLAYBACK button. Push the tension regulator arm assembly ❻ toward the arrow Ⓐ when the T reel starts rotating. (The tension regulator band is released, and the S reel rotates.)
5) Press the STOP button to stop. (See Fig. 2-8.)

3. Recording

1) Take the steps required in 1.
2) Place a rubber band ❹ between the S and T reels.
3) Cover a cap ❺ on the LED assembly.
4) Press the RECORD button. Push the tension regulator arm assembly ❻ toward the arrow Ⓐ when the T reel starts rotating. (The tension regulator band is released, and the S reel rotates.)
5) Press the STOP button to stop. (See Fig. 2-8.)

4. Ejecting

1) Press the EJECT button.

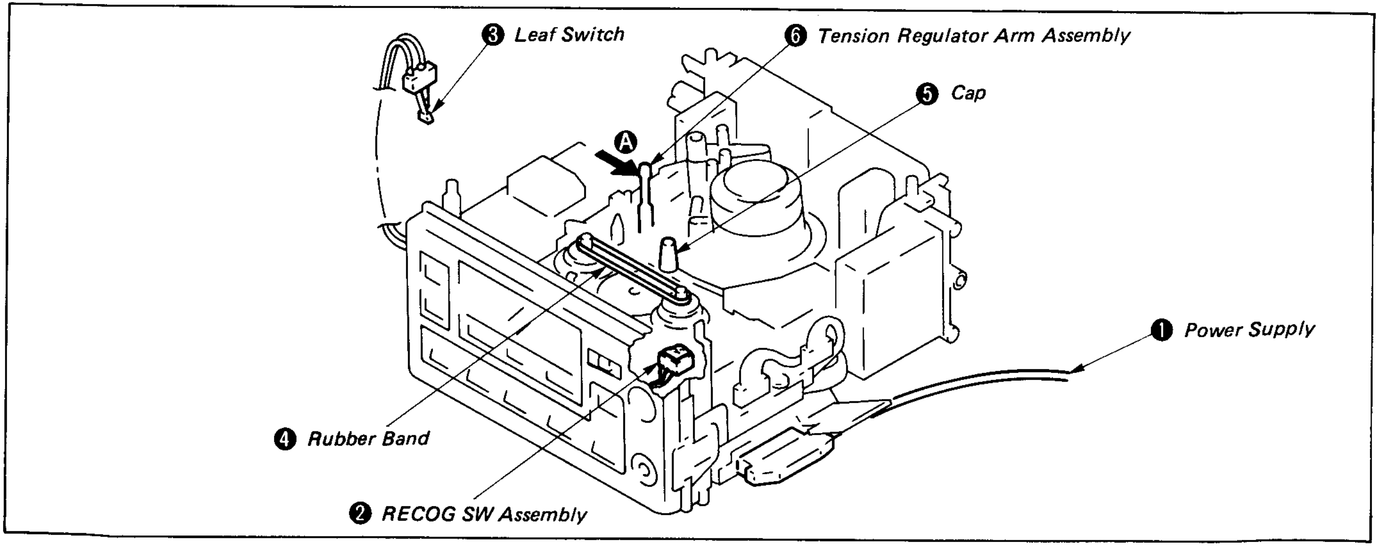

❸ Leaf Switch
❻ Tension Regulator Arm Assembly
❺ Cap
Ⓐ
❶ Power Supply
❹ Rubber Band
❷ RECOG SW Assembly

Fig. 2-8

2-1-8. Mode Selector Operation

1. Selector Parts (External View)

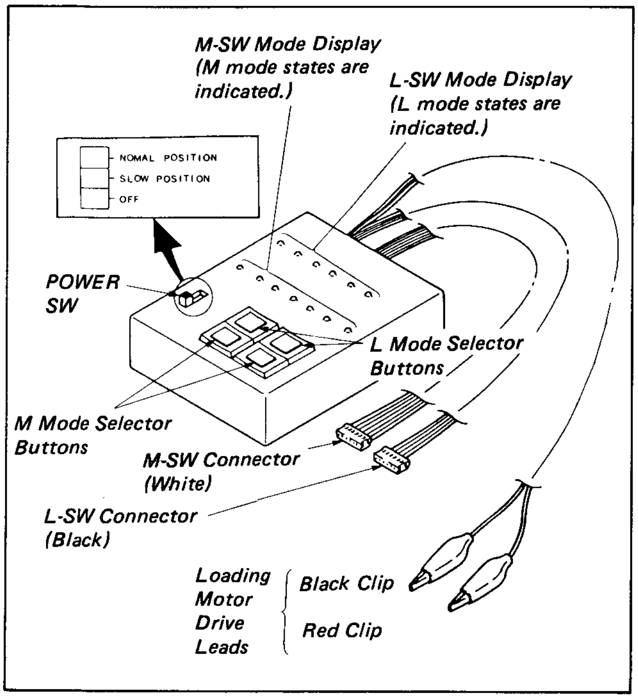

M-SW Mode Display
(M mode states are indicated.)
L-SW Mode Display
(L mode states are indicated.)
NOMAL POSITION
SLOW POSITION
OFF
POWER SW
L Mode Selector Buttons
M Mode Selector Buttons
M-SW Connector (White)
L-SW Connector (Black)
Loading Motor Drive Leads
Black Clip
Red Clip

Fig. 2-9

2. Connection

1) Plug the M-SW connector (6P connector, 6 harnesses, white) to the MS-4 Board (CN905) of the set.
2) Plug the L-SW connector (6P connector, 4 harnesses, black) to the LS-9 Board (CN904) of the set.
3) Connect each of red and black clip of the loading motor to each of red and gray loading motor drive lead wire, respectively. (See Fig. 2-9.)

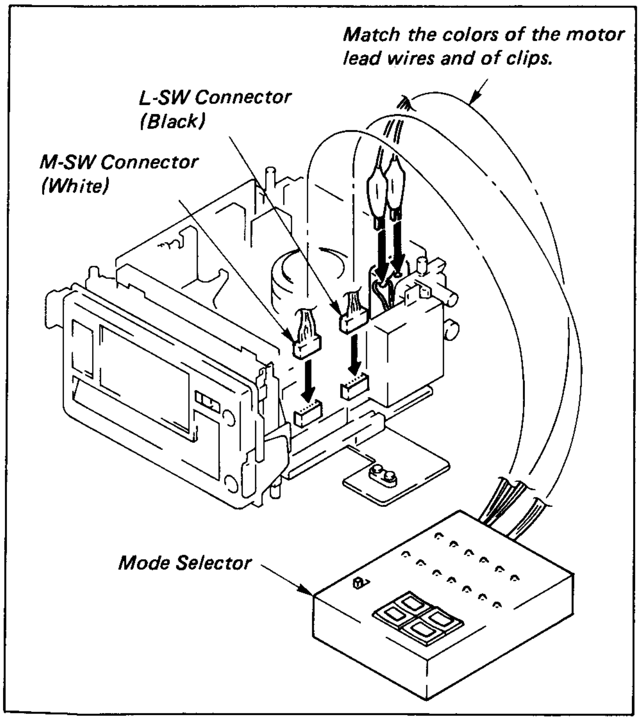

Match the colors of the motor lead wires and of clips.
L-SW Connector (Black)
M-SW Connector (White)
Mode Selector

Fig. 2-10

3. Precautions

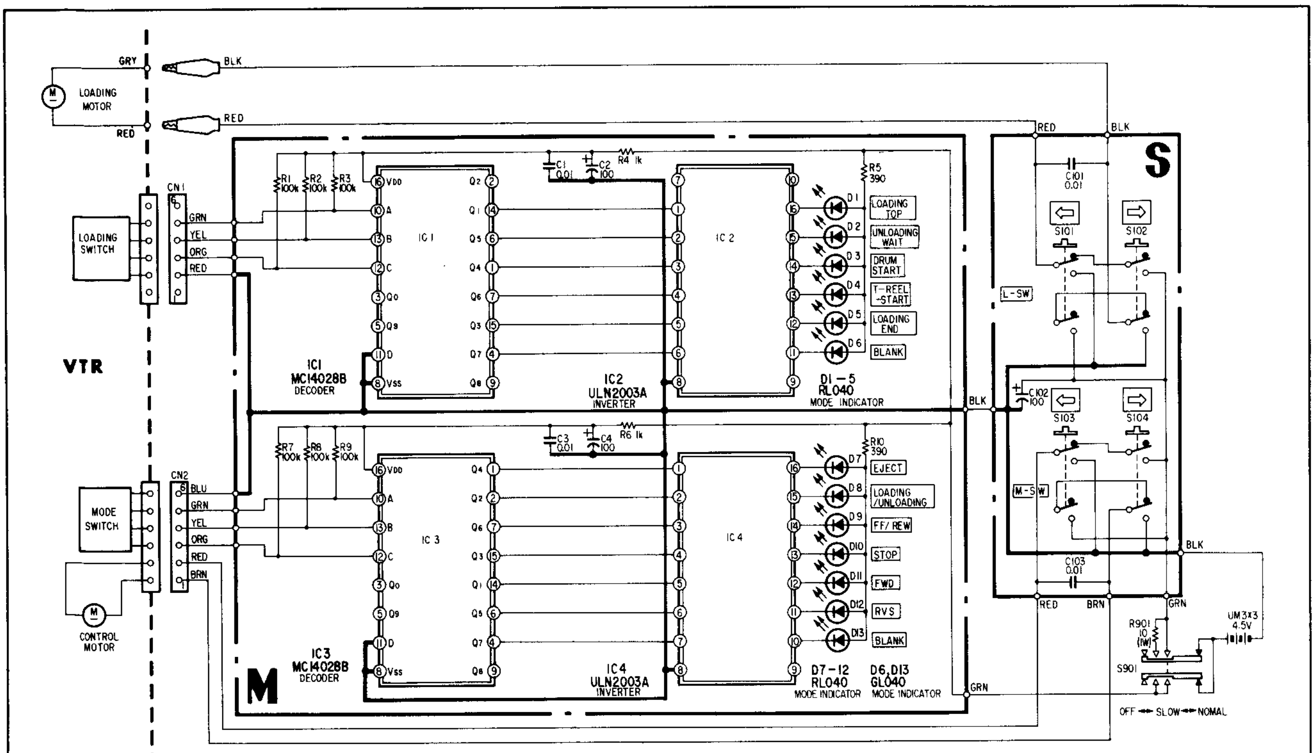
1) Make sure to set the M-SW mode to LOADING/UNLOADING when operating L-SW.
2) Make sure to set the L-SW mode to TOP or END when operating M-SW.

4. Operation

"BLANK" lights if each mode state is not set up during selection regardless of the L or M mode.

1) L Mode
   - Lighted to right sequentially from LOADING TOP to LOADING END when the righthand side button of the L mode selector buttons is kept pressing.
   - Keep pressing the selector button on the lefthand side to set up the desired mode in order to change from LOADING END to LOADING TOP.
   - The L mode operates more slowly in the slow position than in the normal position.
2) M Mode
   - Set L-SW to LOADING TOP to eject.
   - Set L-SW to LOADING END to change from FF/REW to RVS or from RVS to FF/REW.
   - Keep pressing the righthand side selector button of the M MODE to light to right sequentially from EJECT to RVS.
   - Keep pressing the selector button on the lefthand side to set up the desired mode in order to change from RVS to EJECT.

5. Mode Selector Schematic Diagram


GRY
BLK
LOADING MOTOR
RED
VTR
CN1
LOADING SWITCH
GRN
YEL
ORG
RED
R1 100k
R2 100k
R3 100k
VDD
IC1
IC1 MC14028B DECODER
C1 0.01
C2 100
R4 1k
IC2
IC2 ULN2003A INVERTER
R5 390
D1 LOADING TOP
D2 UNLOADING WAIT
D3 DRUM START
D4 T-REEL -START
D5 LOADING END
D6 BLANK
D1-5 RL040 MODE INDICATOR
S
RED
BLK
C101 0.01
S101
S102
L-SW
C102 100
S103
S104
M-SW
BLK
C103 0.01
RED
BRN
GRN
R901 10 (1W)
UM3x3 4.5V
S901
OFF ◄► SLOW ◄► NOMAL
CN2
MODE SWITCH
BLU
GRN
YEL
ORG
RED
BRN
CONTROL MOTOR
R7 100k
R8 100k
R9 100k
C3 0.01
C4 100
R6 1k
R10 390
IC3
IC3 MC14028B DECODER
IC4
IC4 ULN2003A INVERTER
D7 EJECT
D8 LOADING /UNLOADING
D9 FF/REW
D10 STOP
D11 FWD
D12 RVS
D13 BLANK
D7-12 RL040 MODE INDICATOR
D6, D13 GL040 MODE INDICATOR
M
GRN

M-SW (IC 3)

DECODER INPUT			MODE	LED NO.
C	B	A		
0	0	0		
0	0	1	FWD	D11
0	1	0	LOADING/UNLOADING	D8
0	1	1	STOP	D10
1	0	0	EJECT	D7
1	0	1	RVS	D12
1	1	0	FF/REW	D9
1	1	1	BLANK	D13

0: INPUT LEVEL L
1: INPUT LEVEL H

L-SW (IC 1)

DECODER INPUT			MODE	LED NO.
C	B	A		
0	0	0		
0	0	1	LOADING TOP	D1
0	1	0		
0	1	1	LOADING END	D5
1	0	0	DRUM START	D3
1	0	1	UNLOADING WAIT	D2
1	1	0	T-REEL-START	D4
1	1	1	BLANK	D6

SWITCH		DIRECTION OF MOTOR REVOLUTION
⇦	⇨	
OFF	OFF	STOP
ON	OFF	⇦
OFF	ON	⇨

⇦ L-SW LOADING END → LOADING TOP
M-SW RVS → EJECT

⇨ L-SW LOADING TOP → LOADING END
M-SW EJECT → RVS

6. Mode Selector Parts List

Ref. No.	Part No.	Description		
		CAPACITOR		
C1	1-108-579-00	MYLAR	0.01μF	50V
C2	1-123-333-00	ELECT	100μF	24V
C3	1-108-579-00	MYLAR	0.01μF	50V
C4	1-123-333-00	ELECT	100μF	24V
C101	1-108-579-00	MYLAR	0.01μF	50V
C103	1-108-597-00	MYLAR	0.01μF	50V
		DIODE		
D1	8-179-812-31	DIODE	RL040	
D2	8-179-812-31	DIODE	RL040	
D3	8-179-812-31	DIODE	RL040	
D4	8-179-812-31	DIODE	RL040	
D5	8-179-812-31	DIODE	RL040	
D6	8-719-812-33	DIODE	GL040	
D7	8-179-812-31	DIODE	RL040	
D8	8-179-812-31	DIODE	RL040	
D9	8-179-812-31	DIODE	RL040	
D10	8-179-812-31	DIODE	RL040	
D11	8-179-812-31	DIODE	RL040	
D12	8-179-812-31	DIODE	RL040	
D13	8-719-812-33	DIODE	GL040	

Ref. No.	Part No.	Description		
		IC		
IC1	8-759-240-28	IC	TC4028BP	
IC2	8-759-120-03	IC	μPA2003A	
IC3	8-759-240-28	IC	TC4028BP	
IC4	8-759-120-03	IC	μPA2003A	
		RESISTOR		
R1	1-247-179-00	CARBON	100K	¼W
R2	1-247-179-00	CARBON	100K	¼W
R3	1-247-179-00	CARBON	100K	¼W
R4	1-247-131-00	CARBON	1K	¼W
R5	1-247-121-00	CARBON	390	¼W
R6	1-247-131-00	CARBON	1K	¼W
R7	1-247-179-00	CARBON	100K	¼W
R8	1-247-179-00	CARBON	100K	¼W
R9	1-247-179-00	CARBON	100K	¼W
R10	1-247-121-00	CARBON	390	¼W
R901	1-214-594-00	METAL	10	1W

2-2. PERIODIC CHECKING AND MAINTENANCE ITEMS

Maintenance and periodic checking should be performed as described below to demonstrate the set functions and performance fully, as well as for the sake of the machine and tapes. Provide the following maintenance work after a repair regardless of the duration of operation by the user.

2-2-1. Cleaning Rotary Drum Assembly

1) Lightly place chamois leather (Ref. No. J-2) moisted with a cleaning solution (Ref. No. J-1) on the rotary upper drum assembly and slowly rotate the rotary upper drum assembly counterclockwise by a finger to clean.

Note: Do not rotate the drum by the motor by turning on power or by rotating clockwise by a finger.
The chances of the head chip being damaged are very high if chamois leather is moved perpendicular to the head chip. Absolutely no cleaning method other than that described above should be used.

2-2-2. Tape Guide System Cleaning

1) Set up the cassette compartment assembly in an eject state and clean the tape guide system (No. 1 to 11 guides, capstan spindle and pinch roller) with chamois leather moisted with a cleaning solution. (See Fig. 2-11.)

2-2-3. Drive System Cleaning

1) Clean the drive system (timing belt and reel table surfaces) with a cloth moisted with a cleaning solution.

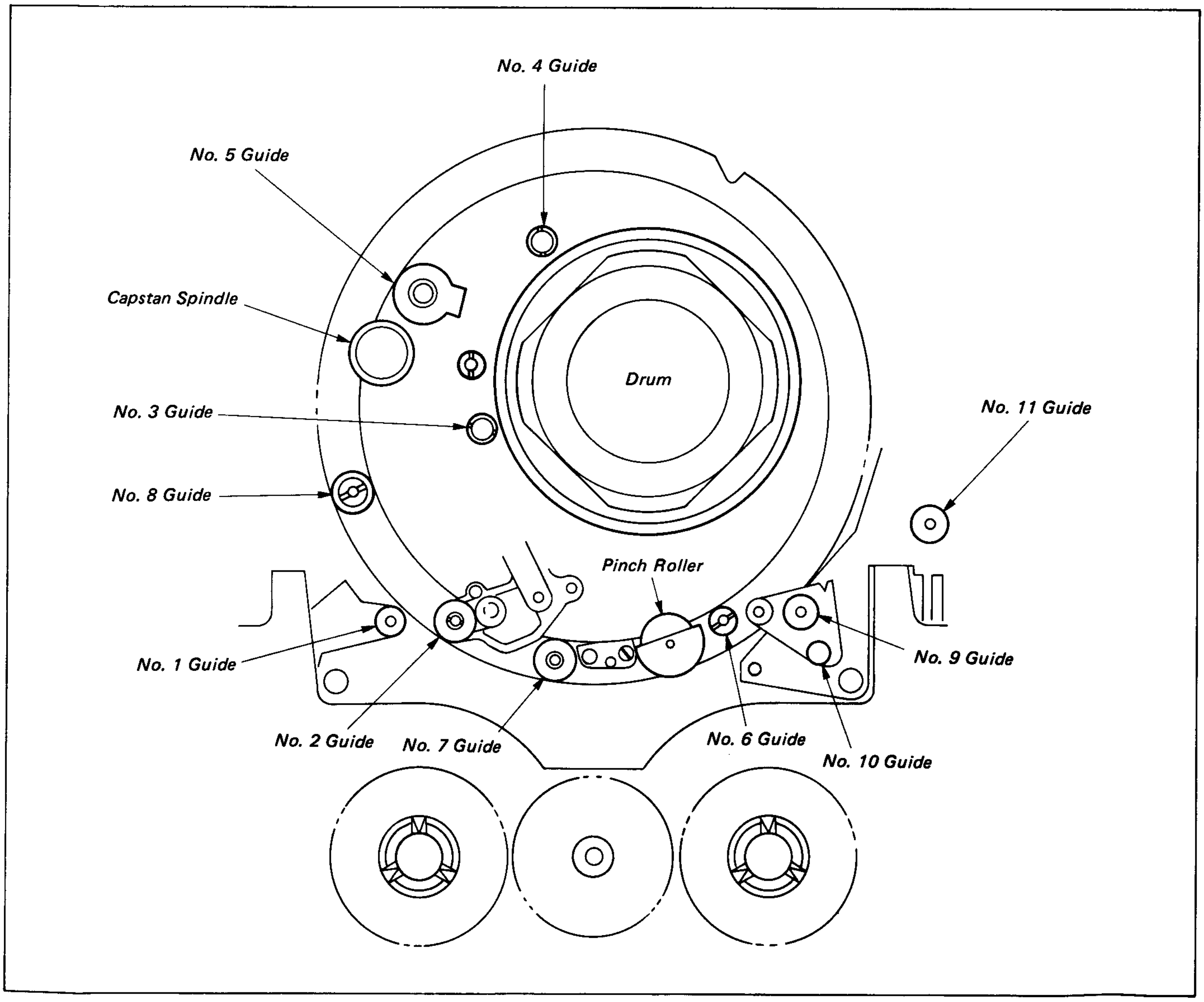

No. 4 Guide
No. 5 Guide
Capstan Spindle
Drum
No. 3 Guide
No. 11 Guide
No. 8 Guide
Pinch Roller
No. 1 Guide
No. 9 Guide
No. 2 Guide
No. 7 Guide
No. 6 Guide
No. 10 Guide

Fig. 2-11

2-2-4. Periodic Check Items

Provide the following maintenance and checking depending on the user use duration.

○Cleaning ◎Oiling ★Replacement ☆Checking

Maintenance and Check Part		Hours in Operation (h)										Remarks
		500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	
Tape Guide System	Cleaning of tape running surfaces	○	○	○	○	○	○	○	○	○	○	Avoid oil
	Cleaning and demagnetizing of rotary drum assembly	○	○	○	○	○	○	○	○	○	○	Avoid oil
Drive System	L motor belt	○	○	○	○	○	○	○	★	○	○	3-686-546-01 Replace here, or every two years
	Timing belt	○	○	○	○	○	○	○	○	○	○	3-686-646-01
	Plunger solenoid	—	—	—	○	—	—	—	○	—	—	1-454-377-11
	Capstan bearing	—	◎	—	◎	—	◎	—	◎	—	◎	Absolutely avoid oil on tape running surfaces.
	Loading motor	—	☆	—	☆	—	☆	—	☆	—	☆	A-7040-031-A
	Control motor	—	☆	—	☆	—	☆	—	☆	—	☆	8-835-110-01
Performance Checking	Abnormal sound	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
	Back tension measurement	—	☆	—	☆	—	☆	—	☆	—	☆	
	Brake system	—	☆	—	☆	—	☆	—	☆	—	☆	
	FWD / RVS Torque measurement	—	☆	—	☆	—	☆	—	☆	—	☆	

Note: Replace parts in overhaul taking the foregoing items into consideration.

Note: SONY Oil

- Be sure to use SONY oil, always. (Various kinds of trouble may occur if the oil viscosity, etc. change.)
  SONY Oil. Parts No. 7-661-088-61
- Be sure to use SONY oil completely free from dust, etc. mixed in it when oiling the bearings. (The bearings may wear and may be seized if oil mixed with dust, etc. is used.)
- One drop of oil is approximately the amount of oil on tip of a stick 2mm in diameter as shown in the diagram. (See Fig. 2-12.)

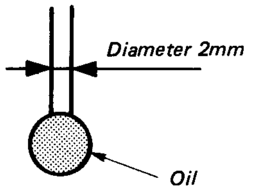


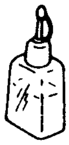
Fig. 2-12

2-2-5. Summary of Servicing Tools

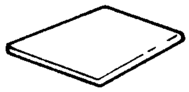
Ref. No.	Name	Part Code	Fixture No.	Use
J-1	Cleaning Fluid	Y-2031-001-0	——	
J-2	Chamois Cloth	2-034-697-00	——	
J-3	Head Demagnetizer		——	
J-4	Dental Mirror (handle) Dental Mirror (mirror)	J-6080-029-A J-6080-030-	SL-5052	Tape Path
J-5	Alignment Tape (WR5-1C)	8-967-995-06		Tape Path
J-6	Dial Tension Gauge	J-6080-827-A		Measuring torques
J-7	Tension measuring reel	J-6080-831-A		With ϕ30 tape
J-8	Tension measuring reel	J-6080-832-A		With ϕ16 string
J-9	No. 10 gear phase matching	J-6080-823-A	GD-2047	
J-10	Rotary DRUM JIG	(Packaged with the rotary upper drum for repairs and replacement.)		
J-11	No. 6 Guide Lock JIG	J-6080-826-A		
J-12	FWD, RVS Take-up Torque Cassette	J-6080-824-A	GD-2086	
J-13	Mode Selector	J-6080-825-A		The whole
J-14	Video Head Checker	7-732-080-01	SL-5151	

Other equipment: Oscilloscope
Analog Tester (20kΩ)

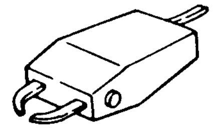
J-1



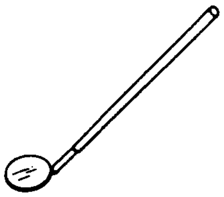
J-2



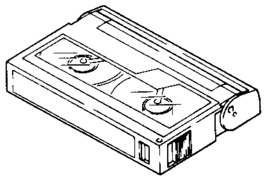
J-3



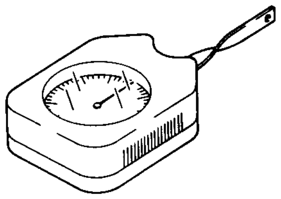
J-4



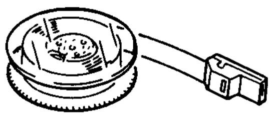
J-5



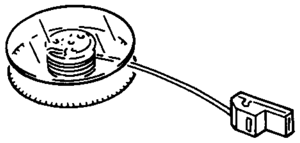
J-6



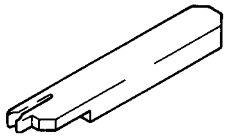
J-7



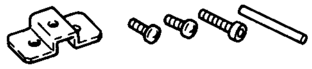
J-8



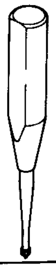
J-9



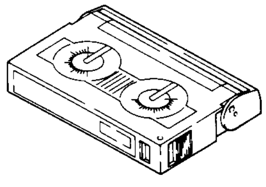
J-10 (Packaged with the rotary upper drum for repairs and replacement.)



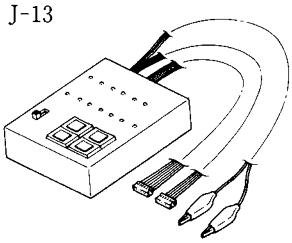
J-11



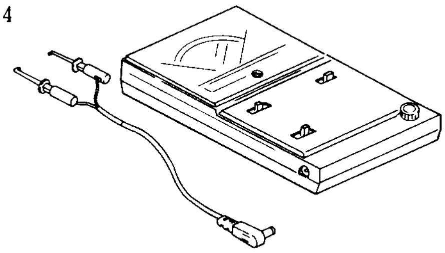
J-12



J-13



J-14



2-3. MECHANISM SECTION CHECKING, ADJUSTMENT AND REPLACEMENT

Note:
- Use a mode selector (Ref. No. J-13) to check, adjust, and replace this mechanism section.
- The modes in ☐ are set up by pressing the mode selector buttons.

2-3-1. S Reel Table Assembly

1. Removal

1) Remove the cassette compartment assembly as instructed in 2-1-6.
2) Set up the FF/REW mode.
3) Remove the screw ❶ and reel table stopper ❷ .
4) Remove the REV brake ❸ .
5) Remove the S reel table assembly ❹ . (See Fig. 2-13.)

Note: Be sure to hold the upper click part in hand when removing. (See the Note in Fig. 2-13.)

2. Remounting

1) Oil half a drop of oil on the upper spherical part of the spindle ❺ .
2) Move the S main brake assembly ❻ toward the arrow Ⓐ .
3) Remount the S reel table assembly ❹ not to touch the tension regulator band assembly ❼ .

Note: Be sure to hold the upper click part in hand when mounting. (See the Note in Fig. 2-13.)

4) Remount the REV brake ❸ .
5) Remount the reel table stopper ❷ and tighten the screw ❶ . (See Fig. 2-13.)
6) Set up the LOADING/UNLOADING mode.
7) Remount the cassette compartment assembly as instructed in 2-1-6.

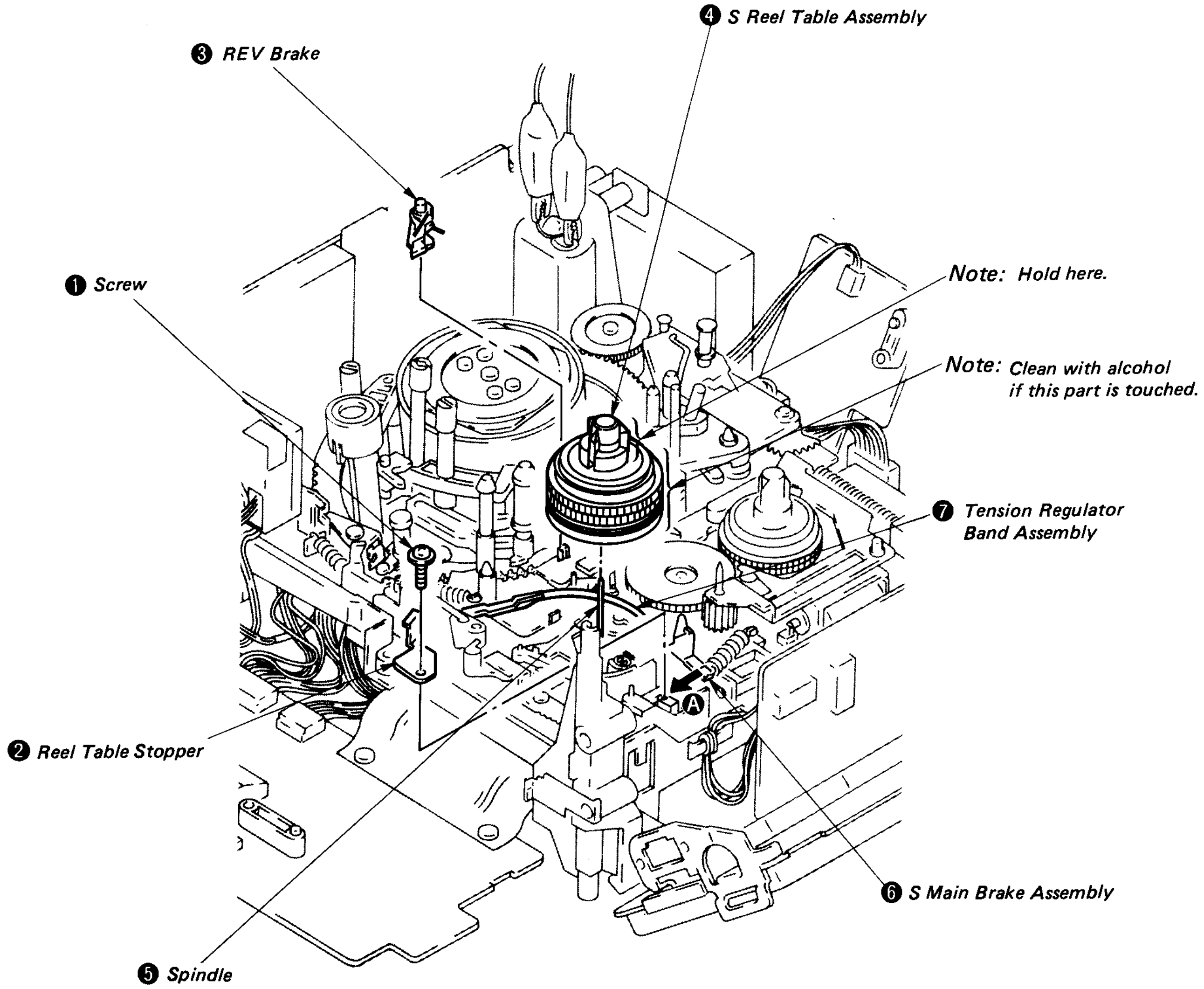

❹ S Reel Table Assembly
❸ REV Brake
❶ Screw
Note: Hold here.
Note: Clean with alcohol if this part is touched.
❼ Tension Regulator Band Assembly
Ⓐ
❷ Reel Table Stopper
❻ S Main Brake Assembly
❺ Spindle

Fig. 2-13

2-3-2. T Reel Table Assembly

1. Removal

1) Remove the cassette compartment assembly as instructed in 2-1-6.
2) Set up the UNLOADING WAIT mode.
3) Hook the spring ❷ tying the T soft brake ❶ on the click of the lock slider.
4) Remove the stopper washer ❸ and T soft brake ❶ .
5) Set up the EJECT mode.
6) Move the drive gear (B) ❹ toward the arrow Ⓐ .
7) Remove the T reel table assembly ❺ . (See Fig. 2-14.)

Note: Be sure to hold the upper click part in hand when removing. (See the Note in Fig. 2-13.)

2. Remounting

1) Oil half a drop of oil on the upper spherical part of the spindle ❻ .
2) Move the drive gear (B) ❹ toward the arrow Ⓐ . (Check that the EJECT mode is set up.)
3) Remount the T reel table assembly ❺ .
4) Remount the T soft brake ❶ and stop washer ❸ .
5) Rehook the spring ❷ on the click of the T soft brake ❶ . (See Fig. 2-14.)
6) Set up the LOADING TOP and LOADING/UNLOADING modes.
7) Remount the cassette compartment assembly as instructed in 2-1-6.

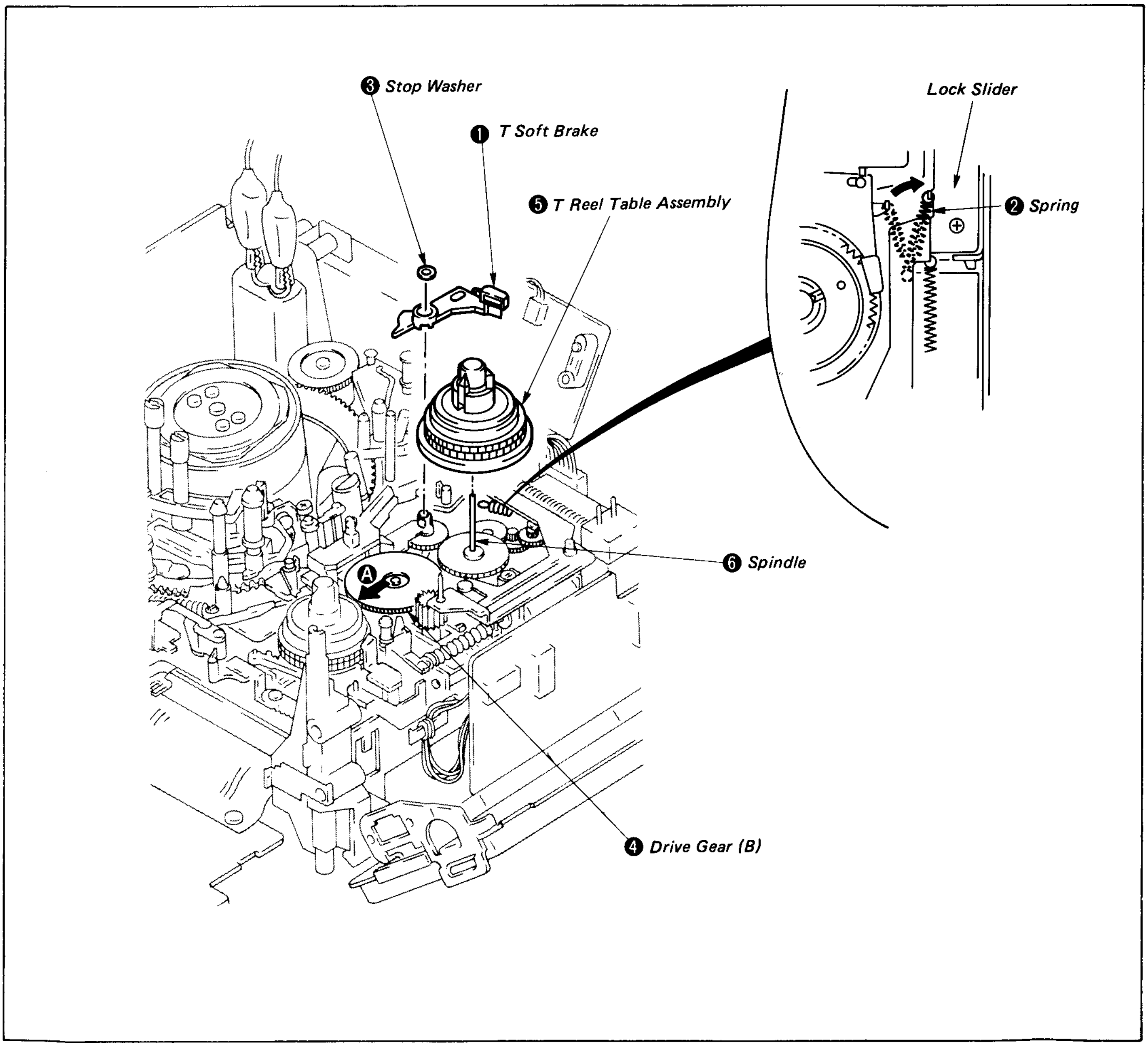


Fig. 2-14

2-3-3. Pinch Press Arm Assembly

1. Removal

1) Hook the spring ❶ on the pinch press arm assembly ❷ .
2) Remove the stop washer ❸ and pinch press arm assembly ❷ . (See Fig. 2-15.)

2. Remounting

1) Oil half a drop of oil on the spindle ❹ .
2) Remount the pinch press arm assembly ❷ and stop washer ❸ .
3) Rehook the spring ❶ on the tension regulator spring hook assembly ❺ . (See Fig. 2-15.)

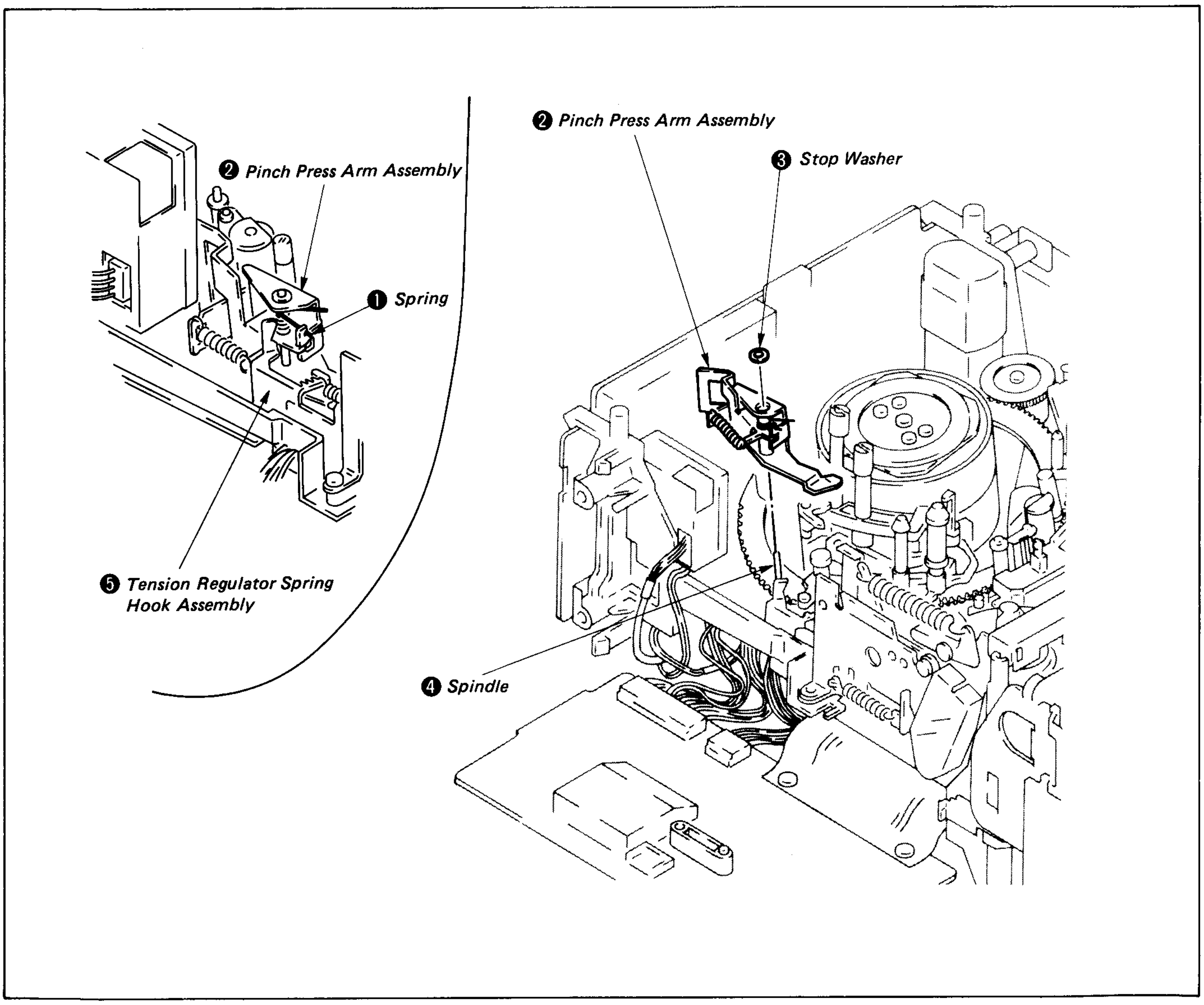

❷ Pinch Press Arm Assembly
❶ Spring
❺ Tension Regulator Spring Hook Assembly
❷ Pinch Press Arm Assembly
❸ Stop Washer
❹ Spindle

Fig. 2-15

2-3-4. Tension Regulator Arm Assembly

1. Removal

1) Remove the cassette compartment assembly as instructed in 2-1-6.
2) Change the hooking position of the spring as instructed in 1) of Removal in 1. of 2-3-3.
3) Remove the spring ❶ . (Write down the spring hooking position).
4) Remove the screw ❷ and tension regulator spring hook assembly ❸ .
5) Set up the FF/REW mode.
6) Disengage the click ❹ of the tension regulator band assembly.
7) Remove the tension regulator arm assembly ❺ . (See Fig. 2-16.)

2. Remounting

1) Oil half a drop of oil on the spindle ❻ .
2) Remount the tension regulator arm assembly ❺ inserting the tension regulator load arm assembly pin ❼ in the cam groove on the rear side of the tension regulator arm assembly ❺ .
3) Reengage the tension regulator band assembly click ❹ . (Do not touch or deform the band.)
4) Set up the LOADING/UNLOADING mode.
5) Remount the tension regulator spring hook assembly ❸ and tighten the screw ❷ .
6) Rehook the spring ❶ in the previous position and lock the screw. (See Fig. 2-16.)
7) Rehook the spring as instructed in 3) of Remounting in 2. of 2-3-3.
8) Remount the cassette compartment assembly as instructed in 2-1-6.

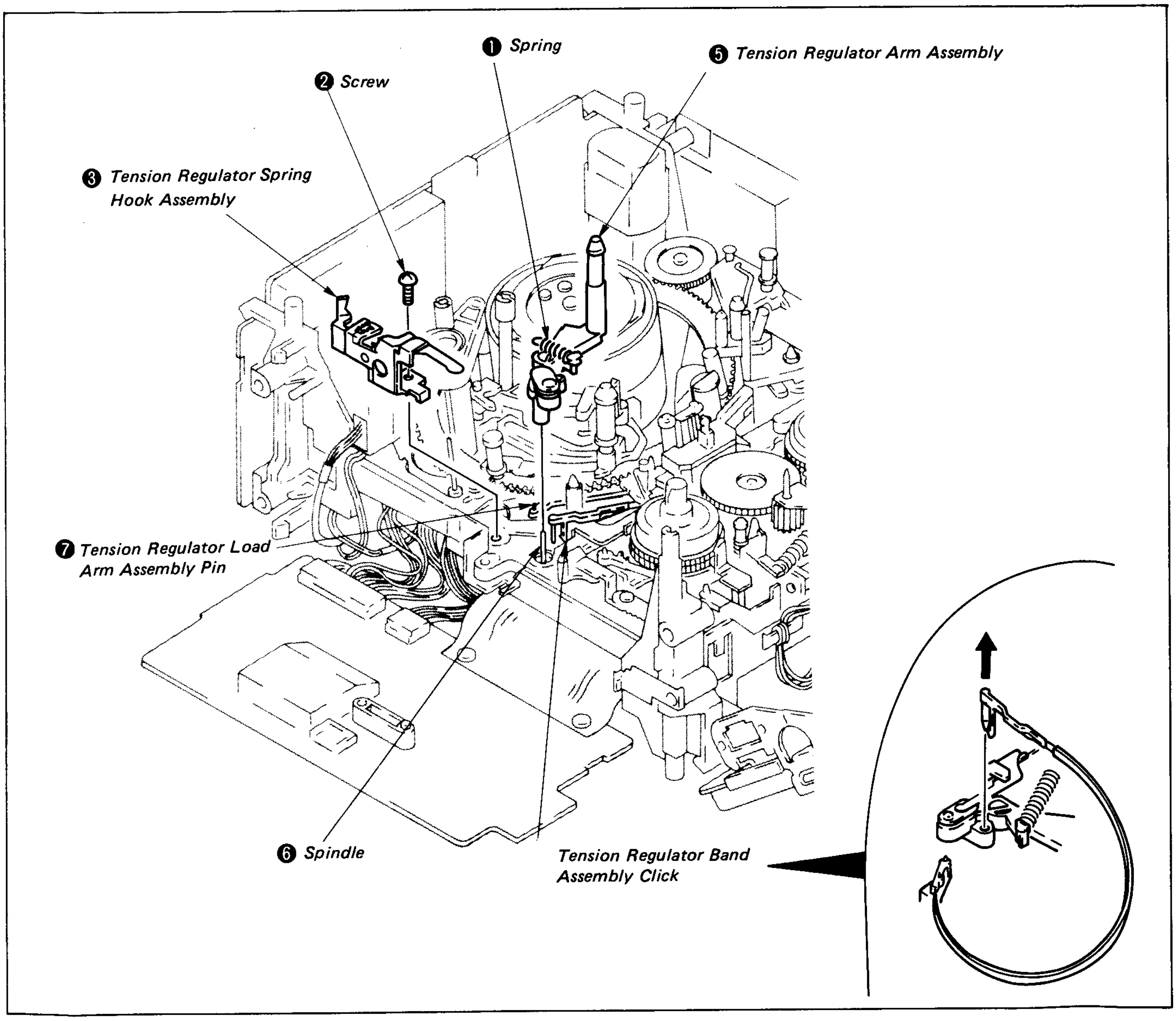

❶ Spring
❺ Tension Regulator Arm Assembly
❷ Screw
❸ Tension Regulator Spring Hook Assembly
❼ Tension Regulator Load Arm Assembly Pin
❻ Spindle
Tension Regulator Band Assembly Click

Fig. 2-16

2-3-5. Tension Regulator Band Assembly

1. Removal

1) Remove the S reel table assembly as instructed in 2-3-1.
2) Disengage the band arm assembly click ❶ .
3) Disengage the click ❷ and remove the tension regulator band assembly ❸ . (See Fig. 2-17.)

2. Remounting

1) Remount the tension regulator band assembly ❸ . (Do not touch or deform the band.)
2) Reengage the band arm assembly click ❶ . (See Fig. 2-17.)
3) Remount the S reel table assembly as instructed in 2-3-1.
4) Adjust the FWD back tension as instructed in 2-3-22.

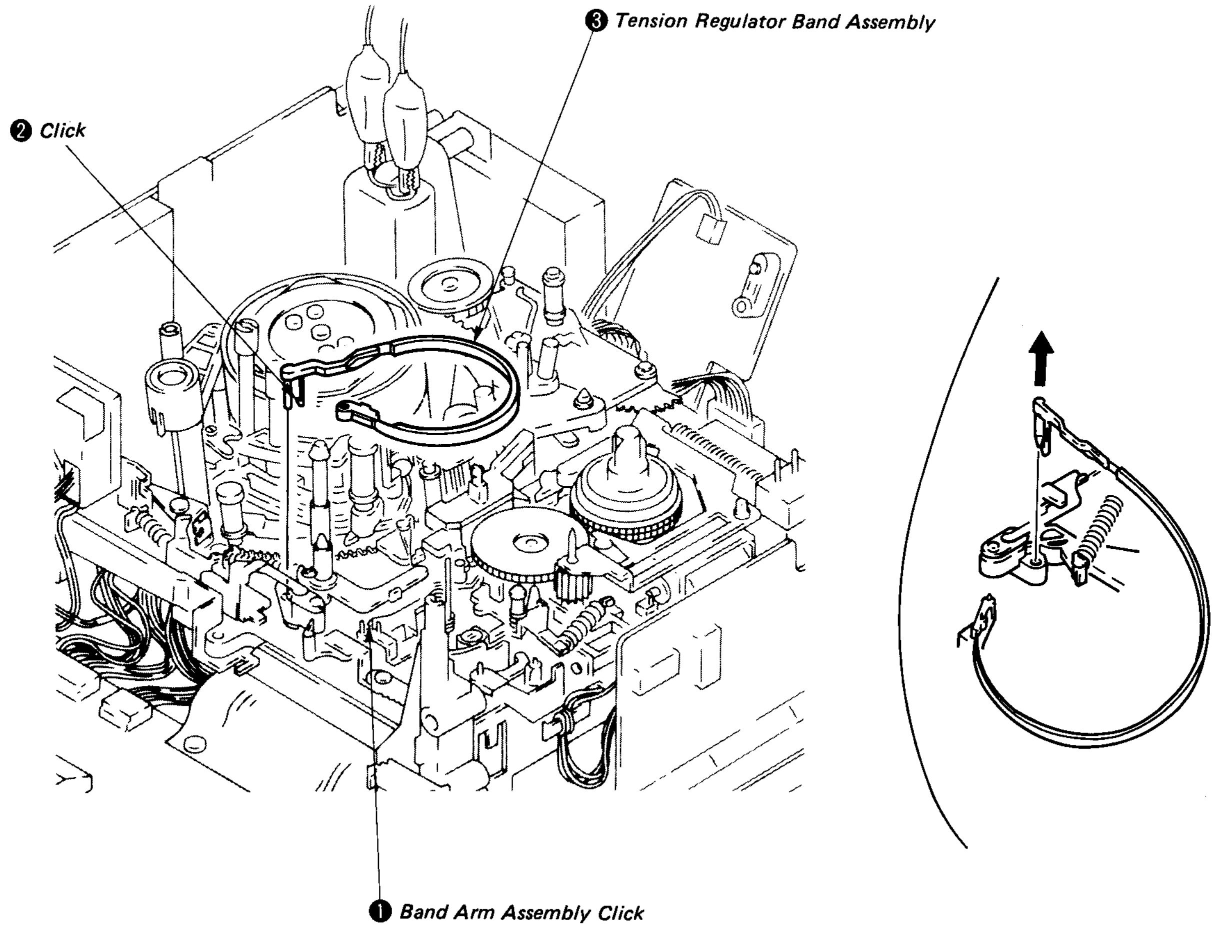

❸ Tension Regulator Band Assembly
❷ Click
❶ Band Arm Assembly Click

Fig. 2-17

2-3-6. Loading Motor Assembly

1. Removal

1) Open the MC-8 Board as instructed in 2-1-5.
2) Remove the L motor belt ❶ .
3) Disconnect the connector ❷ CN516 (white) 2P from the RS-5 Board.
4) Remove the screw ❸ and loading motor assembly ❹ . (See Fig. 2-18.)

2. Remounting

1) Remount the loading motor assembly ❹ and tighten the two screws ❸ .
2) Reconnect the connector ❷ CN516 (white) 2P to the RS-5 Board. (See Fig. 2-18.)
3) Restretch the L motor belt ❶ . (See Fig. 2-19.)
4) Reassemble the circuit boards reversing the sequence of 2-1-5.

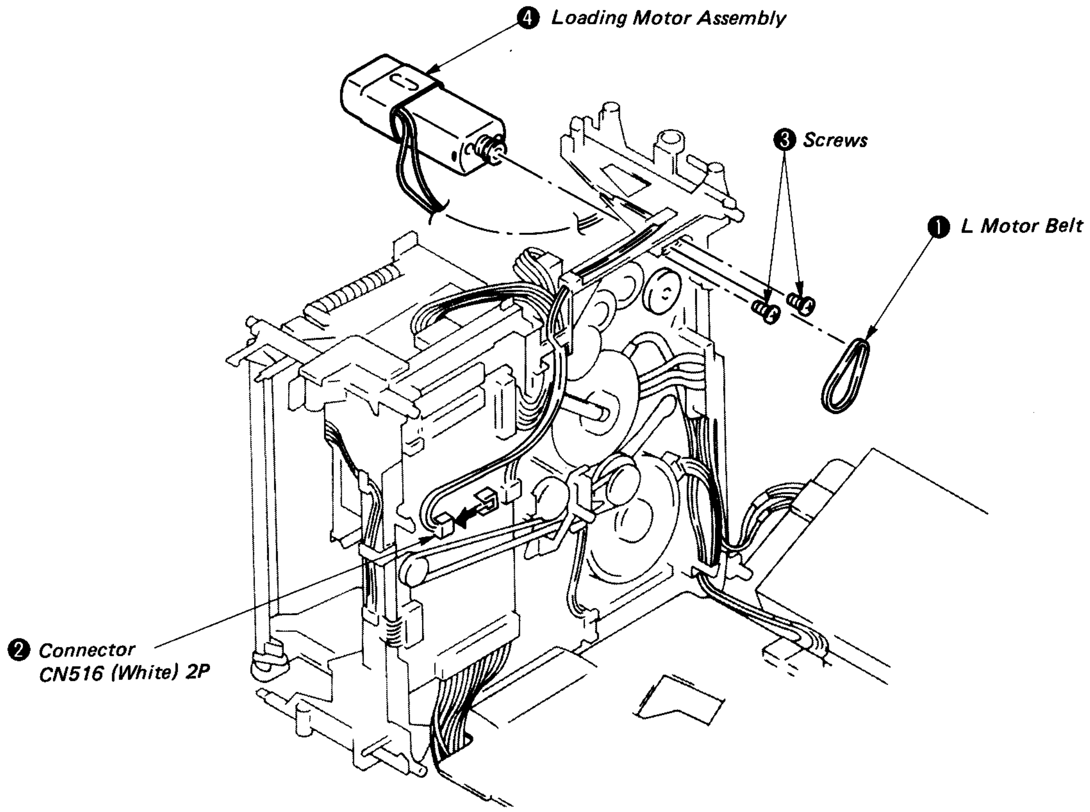

❹ Loading Motor Assembly
❸ Screws
❶ L Motor Belt
❷ Connector
CN516 (White) 2P

Fig. 2-18

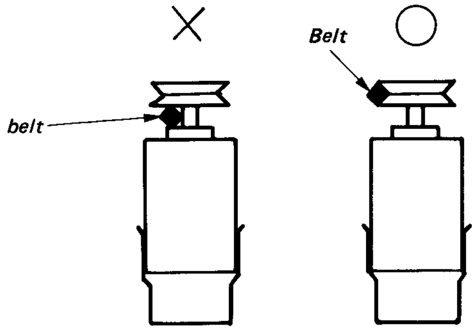


Fig. 2-19

2-3-7. Loading Ring Assembly

1. Removal

1) Operate the mode selectors to move the guide base assembly ❶ to immediately before the lock and the No. 2 guide ❷ to the position where the screw of the ring stopper ❸ immediately before the lock. (Do not move the loading ring assembly ⓫.)
2) Remove the stop washer ❹ and disengage the No. 10 gear assembly ❺.
3) Remove the screw ❻, roller retainer ❼ and roller ❽.
4) Remove the two screws ❾, ring stopper ❸ and roller ❿.
5) Remove the loading ring assembly ⓫ in the arrow Ⓐ direction. (See Fig. 2-20.)

Note: Care should be taken not to strike the drum when removing the loading ring assembly ⓫.

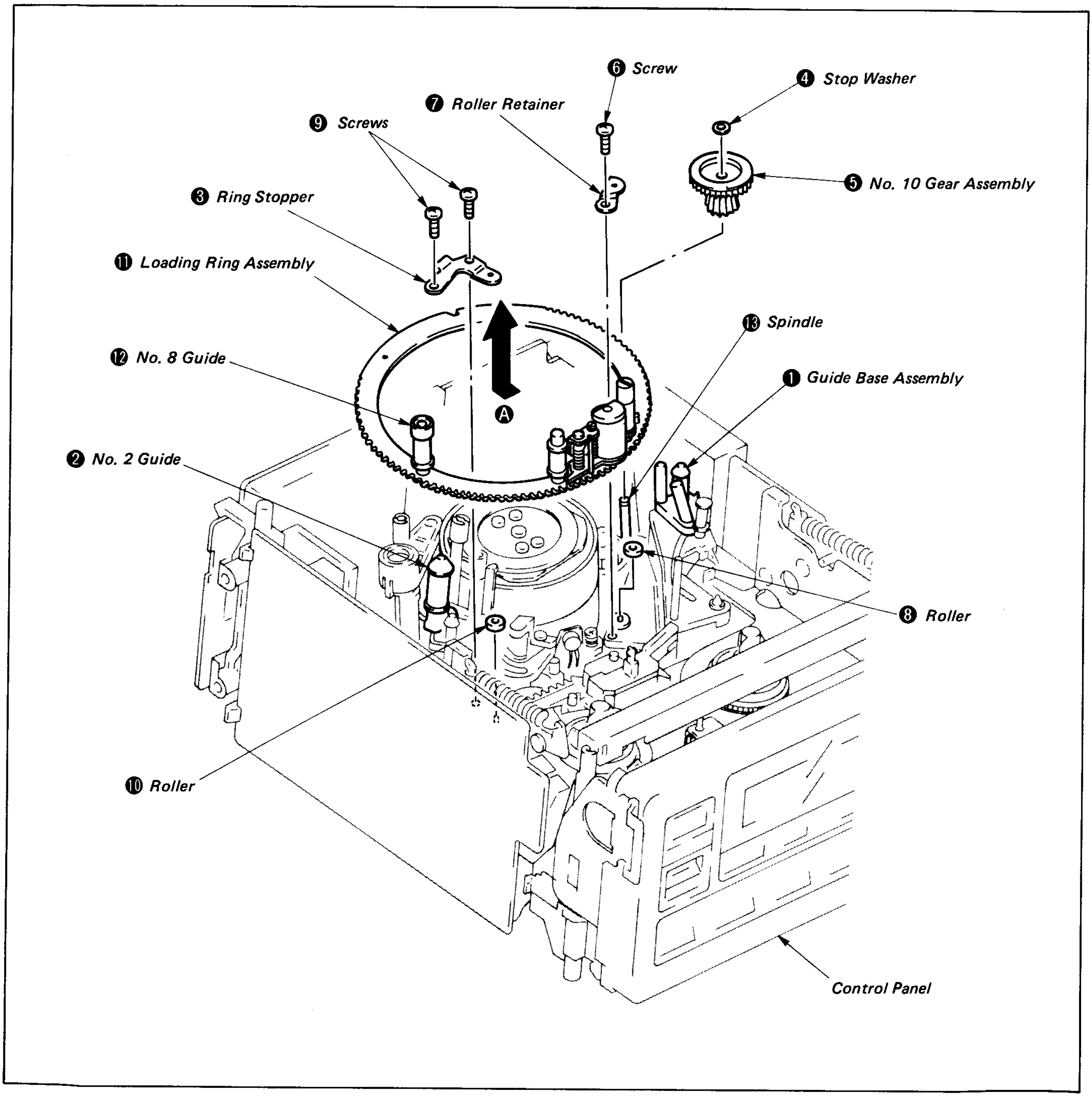
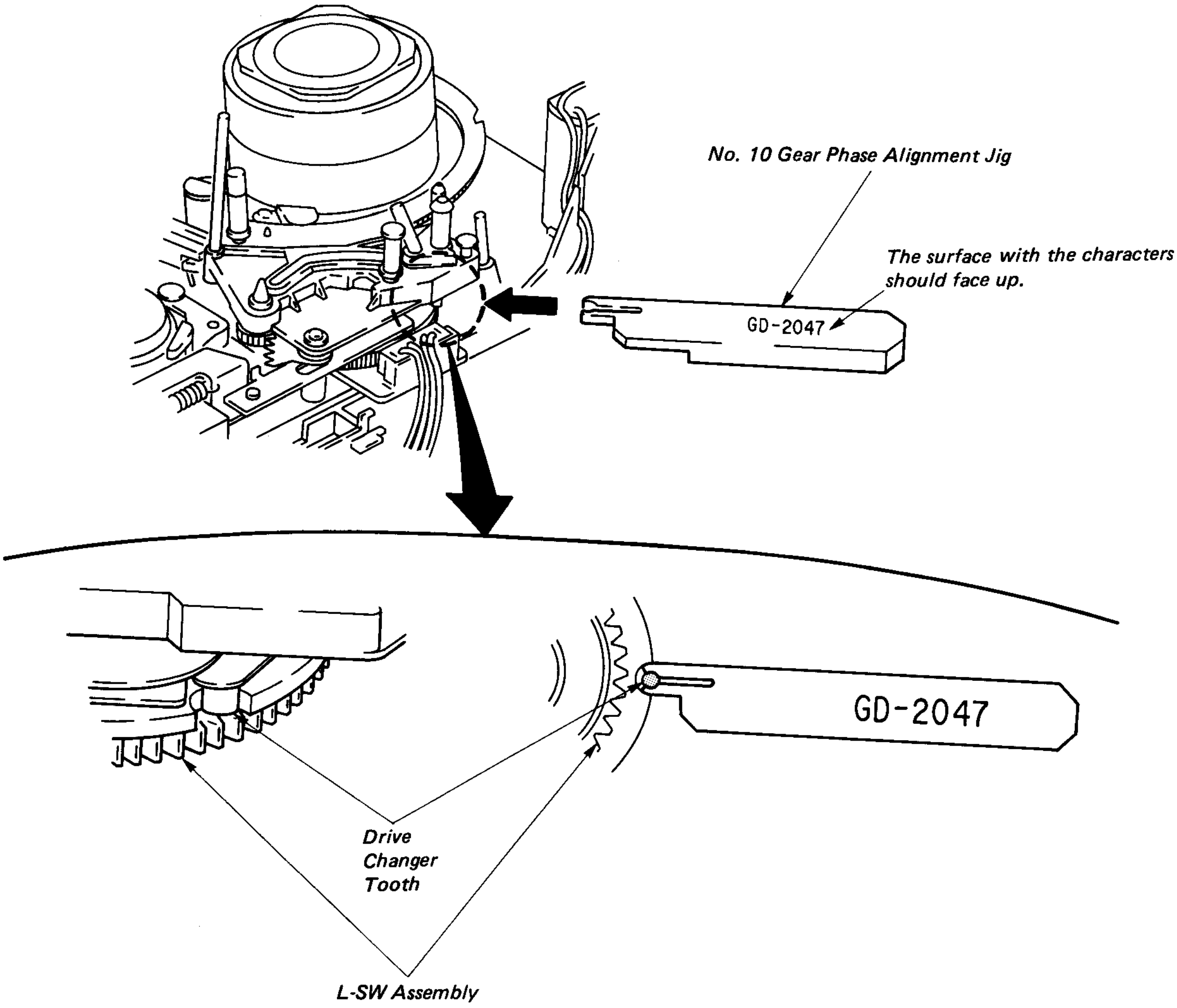

❻ Screw
❹ Stop Washer
❼ Roller Retainer
❾ Screws
❺ No. 10 Gear Assembly
❸ Ring Stopper
⓫ Loading Ring Assembly
⓭ Spindle
⓬ No. 8 Guide
❶ Guide Base Assembly
Ⓐ
❷ No. 2 Guide
❽ Roller
❿ Roller
Control Panel

Fig. 2-20

2. Remounting

1) Remount the loading ring assembly ⓫ in an unthreading condition (with the pinch roller moved to the control panel side). (Check that the loading ring assembly is in the condition of 1) of Removal.)
2) Remount the roller ❿ and ring stopper ❸ and tighten the two screws ❾ . (The No. 8 guide ⓬ should be located near the control panel than the ring stopper ❸ .)
3) Remount the roller ❽ and roller retainer ❼ and tighten the screw ❻ . (Check that the loading ring assembly fits the three rollers.)
4) Oil half a drop of oil on the spindle ⓭ . (See Fig. 2-20.)
5) Check that the tooth of the drive changer is engaging the dent of the L-SW assembly and plug the No. 10 gear phase alignment jig (Ref. No. J-9) (See Fig. 2-21.)
6) Remount the No. 10 gear ❺ and stop washer ❹ pressing the No. 8 guide ⓬ to the ring stopper ❸ .
7) Pull out the No. 10 gear phase alignment jig.
8) Set up the LOADING TOP mode.

Note: Be sure to adjust the tape path as instructed in 2-4 after remounting.



No. 10 Gear Phase Alignment Jig
The surface with the characters should face up.
GD-2047
GD-2047
Drive Changer Tooth
L-SW Assembly

Fig. 2-21

2-3-8. Pinch Roller Assembly

1. Removal

1) Remove the loading ring assembly as instructed in 2-3-7.
2) Remove the stop washer ❶ . (See Fig. 2-22.)
3) Change the hooking position of the spring ❸ on the No. 7 guide assembly ❷ . (See Fig. 2-23.)
4) Rotate the pinch roller assembly ❹ in the arrow Ⓐ direction. (See Fig. 2-24.)
5) Remove the pinch roller assembly ❹ toward the arrow Ⓑ . (See Fig. 2-25.)
6) Remove the spring ❸ . (See Fig. 2-26.)

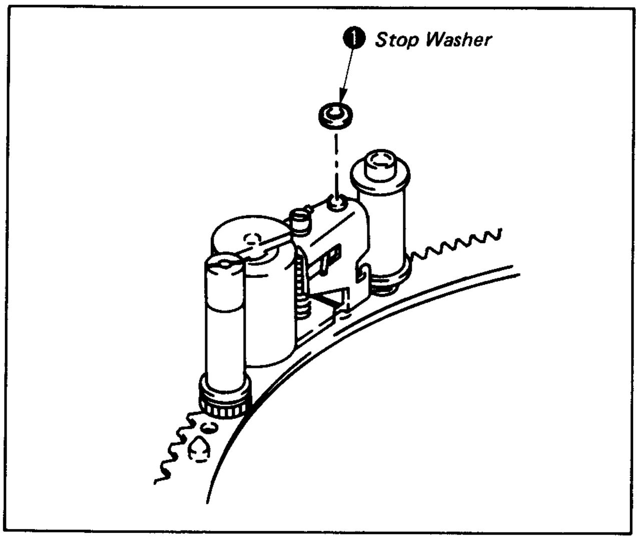

❶ Stop Washer

Fig. 2-22

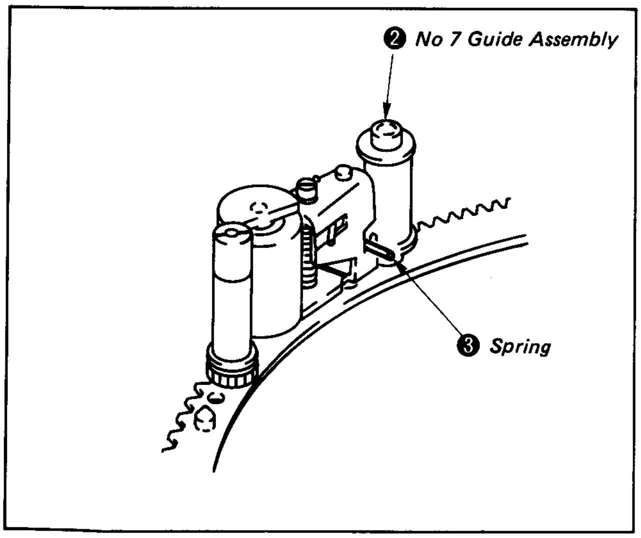

❷ No 7 Guide Assembly
❸ Spring

Fig. 2-23

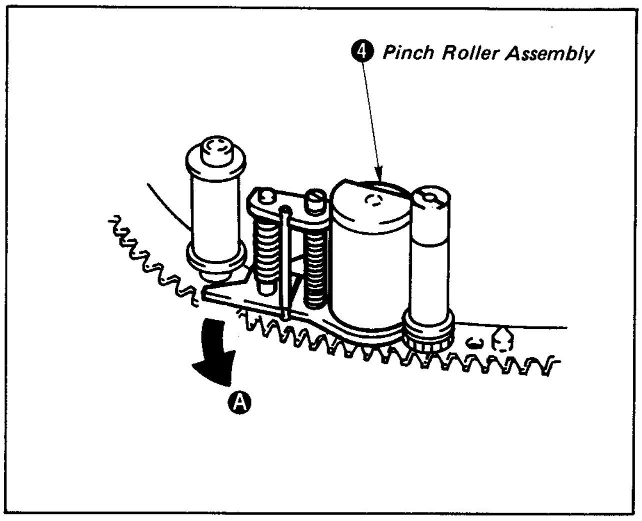

❹ Pinch Roller Assembly
Ⓐ

Fig. 2-24

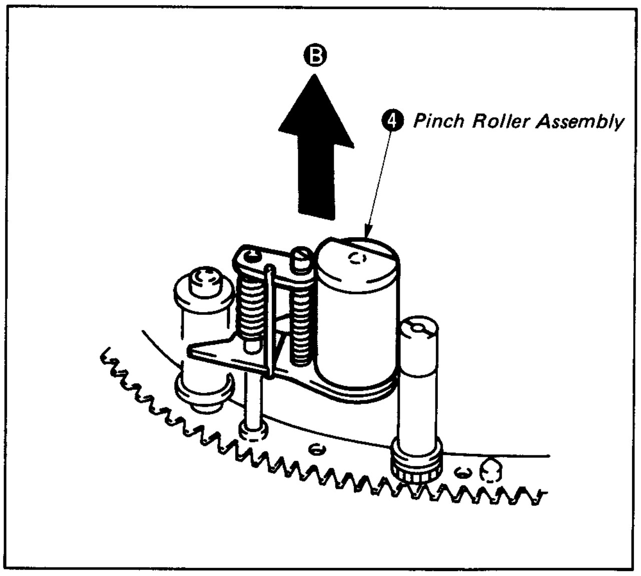

Ⓑ
❹ Pinch Roller Assembly

Fig. 2-25

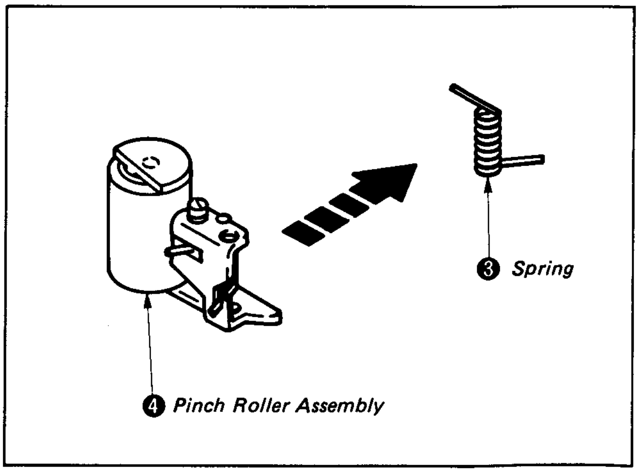

❸ Spring
❹ Pinch Roller Assembly

Fig. 2-26

2. Remounting

1) Rehook the spring ❸ . (See Fig. 2-27.)
2) Reinsert a thin object like a clip ❺ into the pinch roller assembly hole ❻ . (See Fig. 2-28 and 29.)
3) Recontact the loading ring assembly spindle ❼ with the tip of the clip ❺ and fit the pinch roller assembly ❹ . (See Fig. 2-30 and 31.)
4) Rehook the spring on the No. 7 guide assembly ❷ . Confirm that the spring is hooked to part Ⓐ at this time. (See Fig. 2-32.)
5) Remount the stop washer ❶ . (See Fig. 2-33.)
6) Remount the loading ring assembly as instructed in 2-3-7.

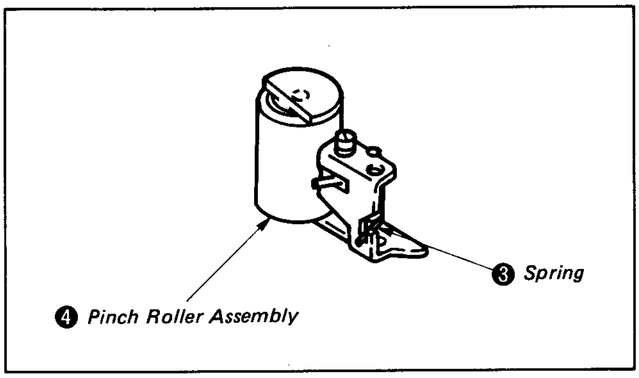

❸ Spring
❹ Pinch Roller Assembly

Fig. 2-27

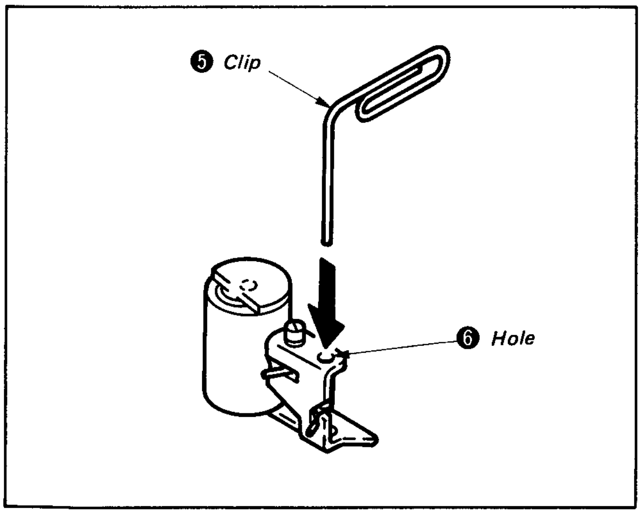

❺ Clip
❻ Hole

Fig. 2-28

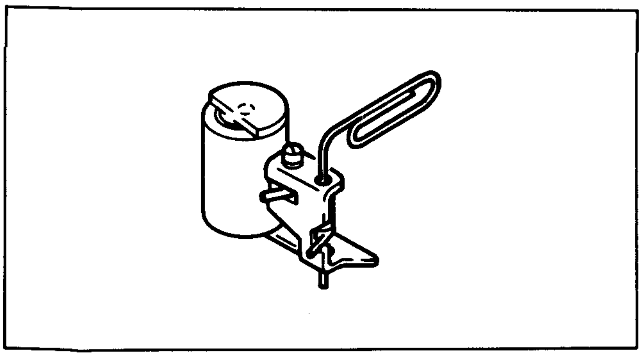


Fig. 2-29

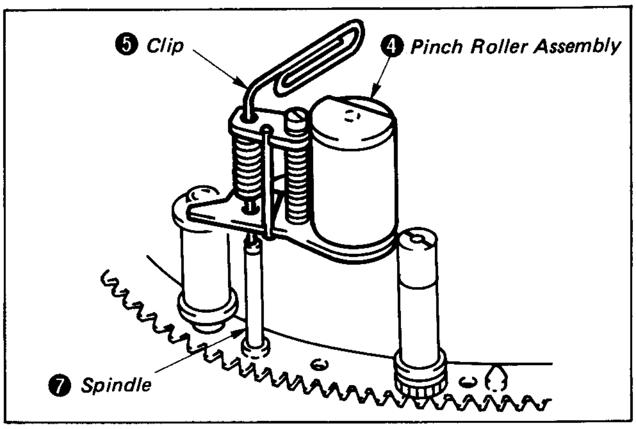

❺ Clip
❹ Pinch Roller Assembly
❼ Spindle

Fig. 2-30

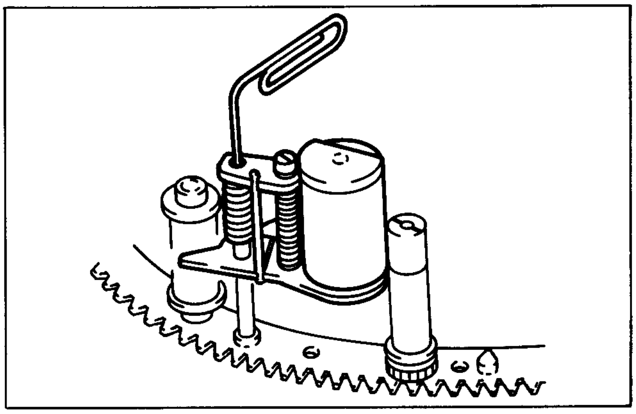


Fig. 2-31

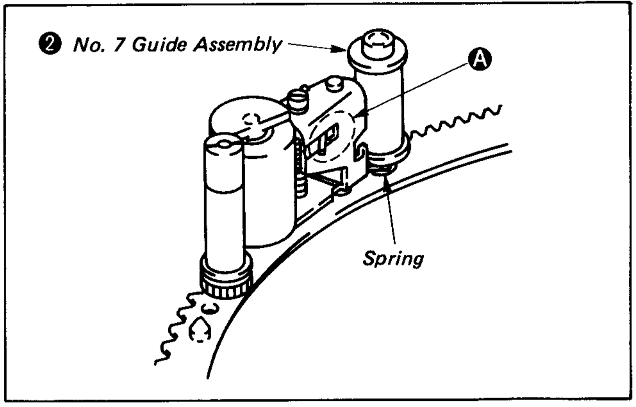

❷ No. 7 Guide Assembly
Ⓐ
Spring

Fig. 2-32

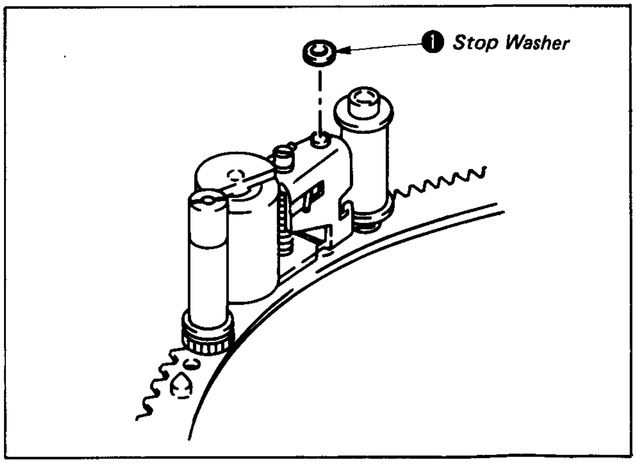

❶ Stop Washer

Fig. 2-33

2-3-9. Slant Guide Chassis Assembly

1. Removal

1) Set up the EJECT mode and raise the cassette compartment asembly.
2) Remove the loading ring assembly as instructed in 2-3-7.
3) Remove the screw ❶ and E ring ❷ .
4) Remove the slant guide chassis assembly ❸ . (See Fig. 2-34.)

2. Remounting

1) Operate the mode selector and align the righthand edge of the L slider and that of the lock slider. (See Fig. 2-35.)
2) Set the guide base assembly of the slant guide chassis assembly in an unthreading condition (with the guide base assembly moved to the control panel side) and remount it. (See Fig. 2-36.)
   Check the meshing position of the slant guide drive gear and the L slider assembly gear at this time.
3) Refit the E ring ❷ and tighten the screw ❶ . (See Fig. 2-34.)
4) Set to Condition 1) of 1. Remounting in 2-3-7.
5) Remount the loading ring assembly as instructed in 2-3-7.
6) Lower the cassette compartment assembly.

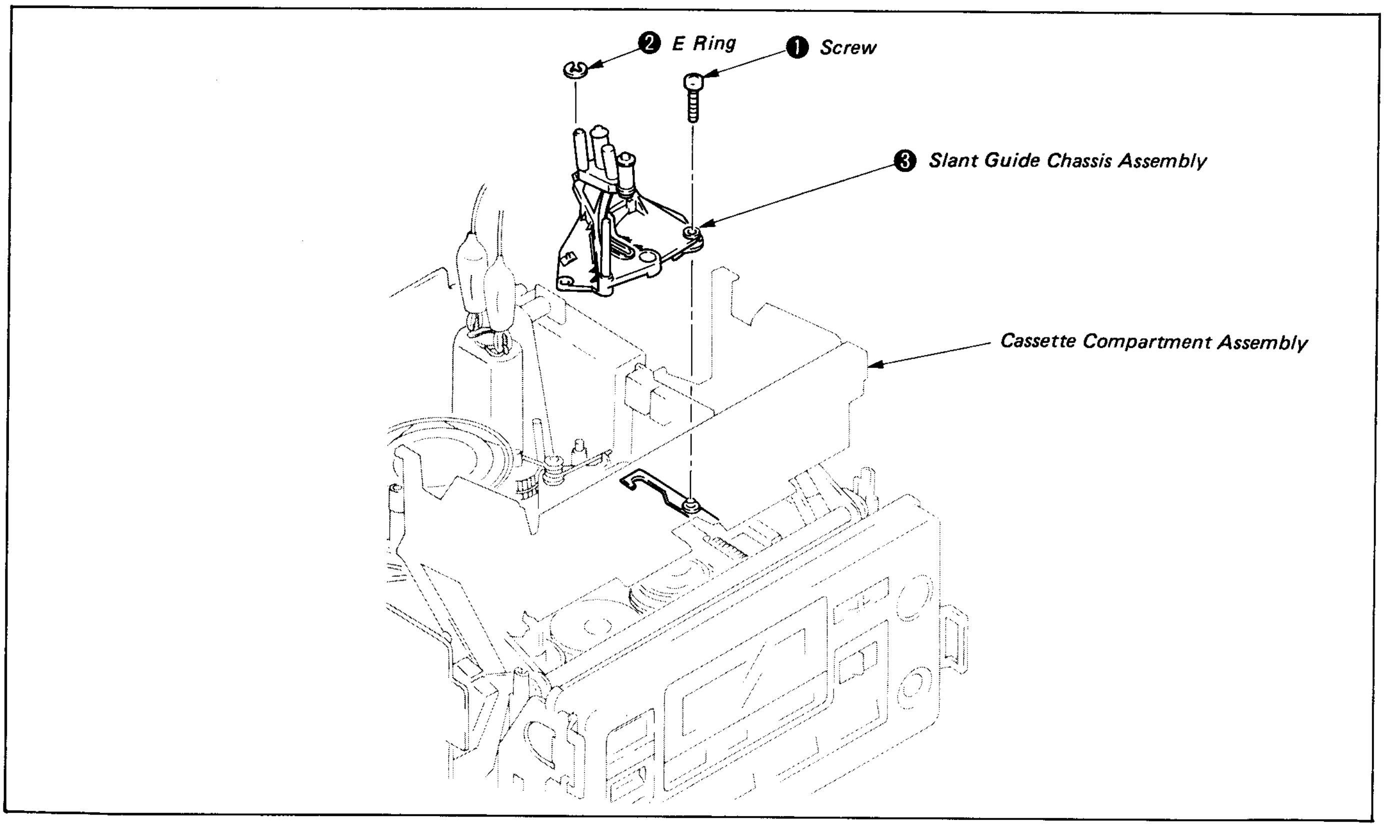

❷ E Ring
❶ Screw
❸ Slant Guide Chassis Assembly
Cassette Compartment Assembly

Fig. 2-34

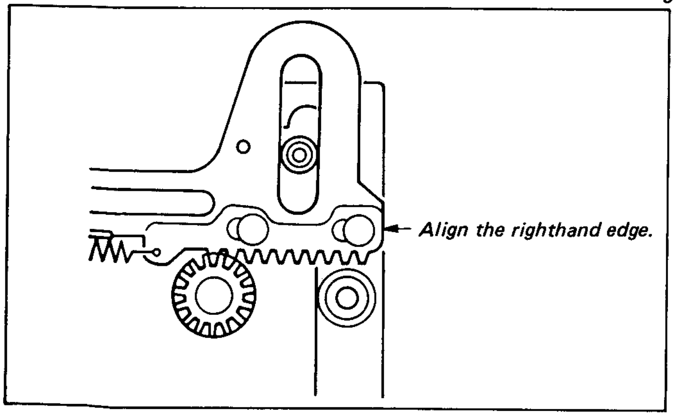

Align the righthand edge.

Fig. 2-35

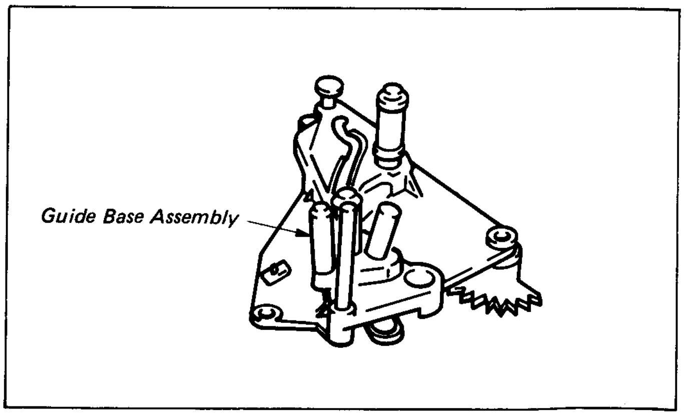

Guide Base Assembly

Fig. 2-36

2-3-10. No. 2 Guide Assembly

1. Removal

1) Remove the tape stopper ❶ .
2) Rotate the rotary upper drum counterclockwise so that the head does not contact.
3) Remove the drum guard screw ❷ .
4) Remove the screw ❸ .
5) Remove the guide nut ❹ of the No. 3 guide, as well as the guide flange ❺ , guide ❻ and compression spring ❼ .
6) Remove the No. 2 guide assembly ❽ . (See Fig. 2-37.)

2. Remounting

1) Mesh the toothless part Ⓐ of the toothed wheel under the No. 2 guide assembly (entrance guide (P) assembly) and that Ⓑ of the L slider.
2) Remount the compression spring ❼ , guide ❻ , and guide flange ❺ in this order and tighten the guide nut ❹ temporarily.
3) Tighten the screw ❸ .
4) Tighten the drum guard screw ❷ .
5) Refit the tape stopper ❶ . (See Fig. 2-37.)

Note: Be sure to adjust the tape path as instructed in 2-4 after remounting.

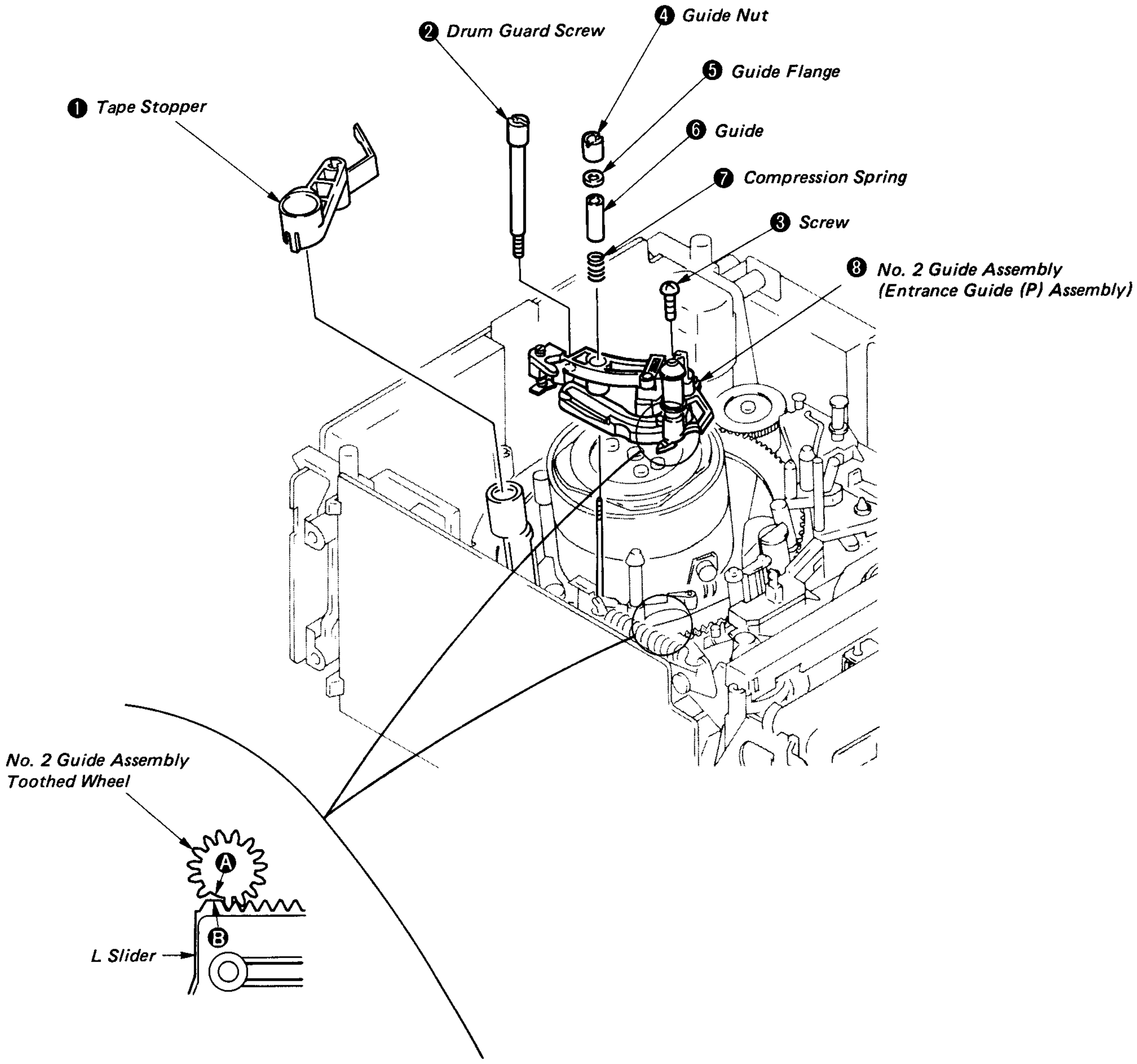

❷ Drum Guard Screw
❹ Guide Nut
❺ Guide Flange
❶ Tape Stopper
❻ Guide
❼ Compression Spring
❸ Screw
❽ No. 2 Guide Assembly (Entrance Guide (P) Assembly)
No. 2 Guide Assembly Toothed Wheel
Ⓐ
Ⓑ
L Slider

Fig. 2-37

2-3-11. L Slider Assembly

1. Removal

1) Remove the slant guide chassis assembly as instructed in 2-3-9.
2) Remove the No. 2 guide assembly (entrance guide (P) assembly) as instructed in 2-3-10.
3) Set up the $\boxed{\text{DRUM START}}$ mode.
4) Remove the slant guide drive gear ❶ .
5) Remove the pin of the tension regulator load arm assembly ❷ from the cam groove of the tension regulator arm assembly. (Refer to 2-3-4 Tension regulator arm assembly.)
6) Remove the two stopper washers ❸ .
7) Remove the L slider assembly ❺ push the RL arm assembly lug ❹ toward the arrow Ⓐ .
8) Remove the stopper washer ❻ and tension regulator load arm assembly ❷ . (See Fig. 2-38.)

2. Remounting

1) Grease the parts. (See Fig. 2-39.)
2) Remount the tension regulator load arm assembly ❷ and stop washer ❻ . (See Fig. 2-38.)
3) Remount the L slider assembly ❺ pushing the RL arm assembly lug ❹ toward the arrow Ⓐ .
4) Refit the two stop washers ❸ .
5) Reinsert the pin of the tension regulator load arm assembly ❷ into the groove of the M slider. (Refer to 2-3-15 M Slider.)
6) Reinsert the pin of the tension regulator load arm assembly ❷ in the cam groove of the tension regulator arm assembly referring to 2) of 2. Remounting in 2-3-4. (Refer to 2-3-4 Tension regulator arm assembly.)
7) Operate the mode selector and align the righthand edges of the L slider and lock slider. (Refer to 1) of 2. Remounting in 2-3-9.)
8) Mesh the notch of the slant guide drive gear with the tooth at the lefthand edge of the L slider assembly by sliding one tooth. (See Fig. 2-40.)
9) Remount the No. 2 guide assembly in accordance with 2-3-10.
10) Remount the slant guide chassis assembly as instructed in 2-3-9.

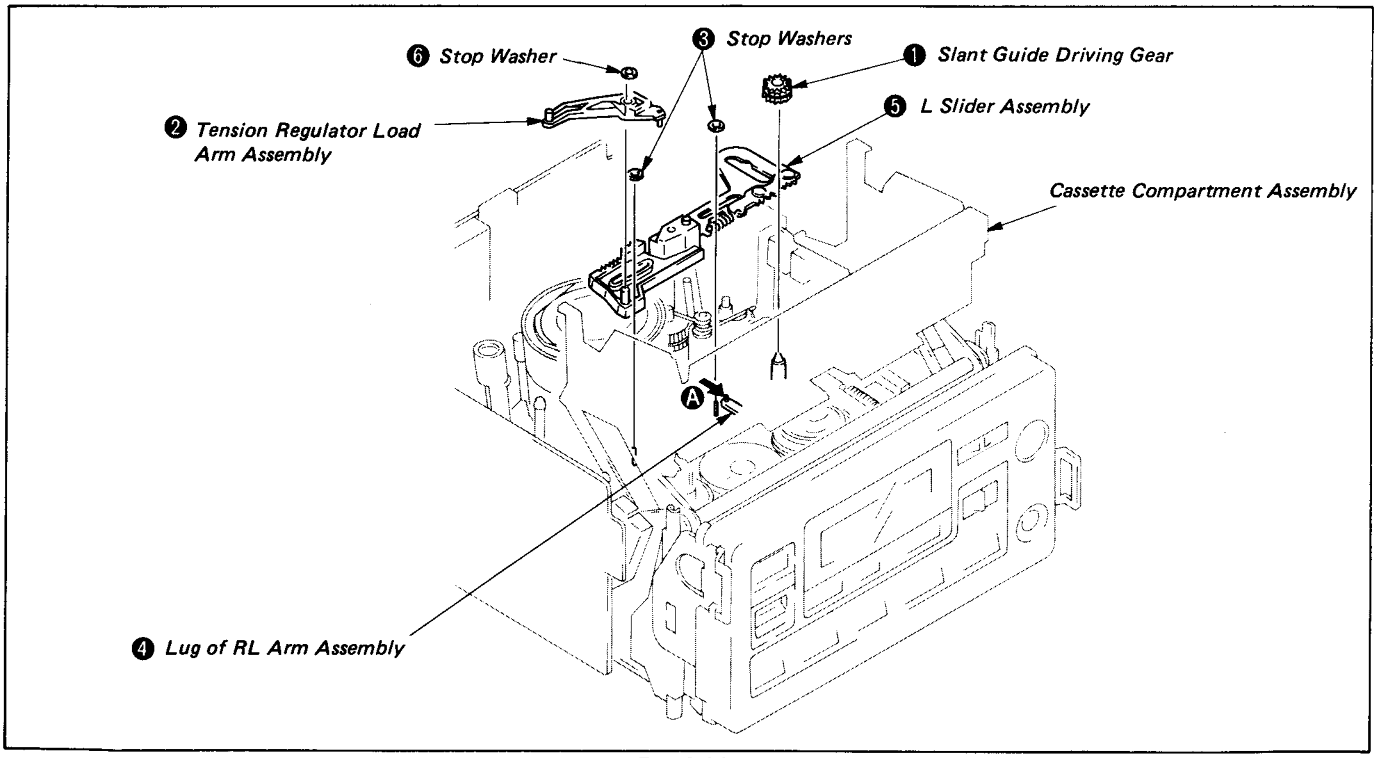

❻ Stop Washer
❸ Stop Washers
❶ Slant Guide Driving Gear
❺ L Slider Assembly
❷ Tension Regulator Load Arm Assembly
Cassette Compartment Assembly
Ⓐ
❹ Lug of RL Arm Assembly

Fig. 2-38

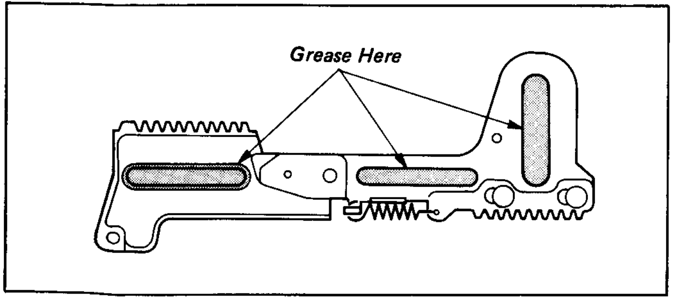

Grease Here

Fig. 2-39

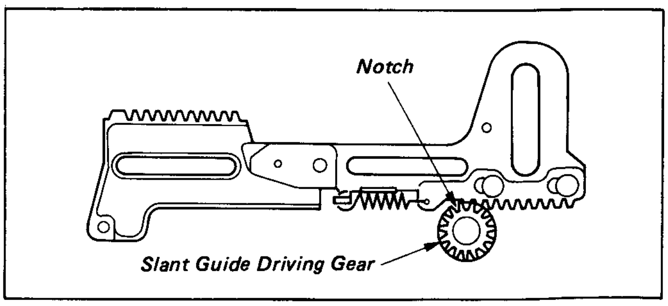

Notch
Slant Guide Driving Gear

Fig. 2-40

2-3-12. L-SW Assembly

1. Removal

1) Remove the L slider assembly as instructed in 2-3-11.
2) Remove the lock slider retainer ❶ .
3) Remove the screw ❷ and lock slider ❸ .
4) Remove the stop washer ❹ and spring ❺ .
5) Remove the drive changer assembly ❻ .
6) Remove the connector ❼ .
7) Remove two screws ❽ and L-SW assembly ❾ . (See Fig. 2-41.)

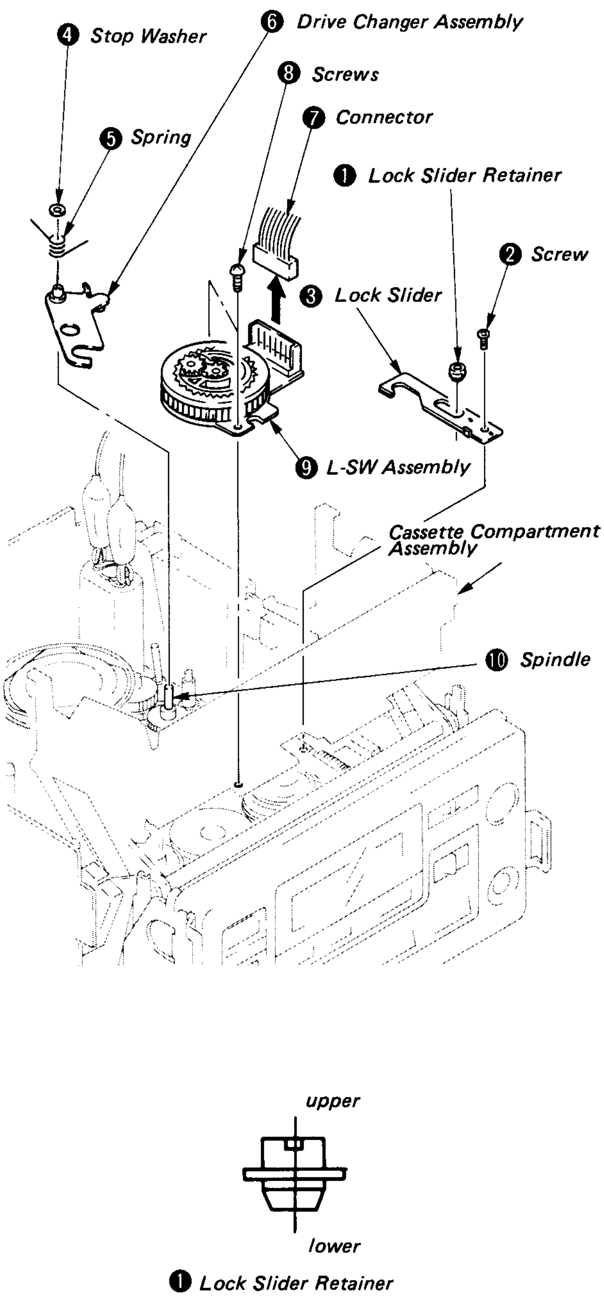

❹ Stop Washer
❻ Drive Changer Assembly
❽ Screws
❼ Connector
❺ Spring
❶ Lock Slider Retainer
❷ Screw
❸ Lock Slider
❾ L-SW Assembly
Cassette Compartment Assembly
❿ Spindle
upper
lower
❶ Lock Slider Retainer

Fig. 2-41

2. Remounting

1) Oil half a drop of oil on the spindle (planetary roller spindle) of the L-SW assembly ❾ .
2) Remount the L-SW assembly ❾ and tighten two screws ❽ .
3) Reconnect the connector ❼ .
4) Operate the mode selector and check that the L-SW assembly ❾ rotates.
5) Oil half a drop of oil on the spindle ❿ .
6) Grease the drive changer assembly ❻ . (See Fig. 2-42.)
7) Remount the drive changer assembly ❻ . (See Fig. 2-41.)
8) Rehook the spring ❺ and refit the stop washer ❹ .
9) Operate the mode selector and check that the L-SW assembly ❾ rotates.
10) Remount the lock slider ❸ and tighten the screw ❷. Confirm that the positioning dowel is firmly in place.
11) Remount the lock slider retainer ❶ . Note correct vertical direction. (See Fig. 2-41.)
12) Operate the mode selector and set in the position shown in Fig. 2-43. The DC roller should be in the groove.
13) Remount the L slider assembly as instructed in 2-3-11.

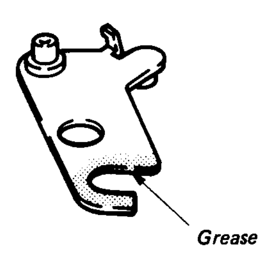


Fig. 2-42

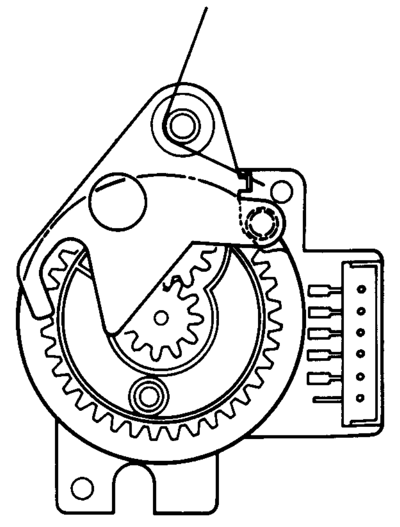


Fig. 2-43

2-3-13. Plunger Solenoid

1. Removal

1) Open the MC-8 Board and disconnect the connector CN501 (white) 3P as instructed in 2-1-5.
2) Remove the cassette compartment assembly as instructed in 2-1-6.
3) Remove the spring ❶ .
4) Remove two stop washers ❷ .
5) Remove the screw ❸ and lock slider ❹ .
6) Remove two screws ❺ and the plunger solenoid ❻ . (Be careful not to inflict scars on the T reel table by a screwdriver. Do not touch the table.) (See Fig. 2-44.)

2. Remounting

1) Reinsert the pin ❼ of the plunger solenoid in the P arm hole ❽ and tighten two screws ❺ . Be careful not to inflict scars on the T reel table by a screwdriver or touch it.)
2) Remount the lock slider ❹ and tighten the screw ❸ .
3) Refit the two stop washers ❷ .
4) Refit the spring ❶ . (See Fig. 2-44.)
5) Remount the cassette compartment assembly in accordance with 2-1-6.
6) Reconnect the connector CN501 (white) 3P on the MC-8 Board.

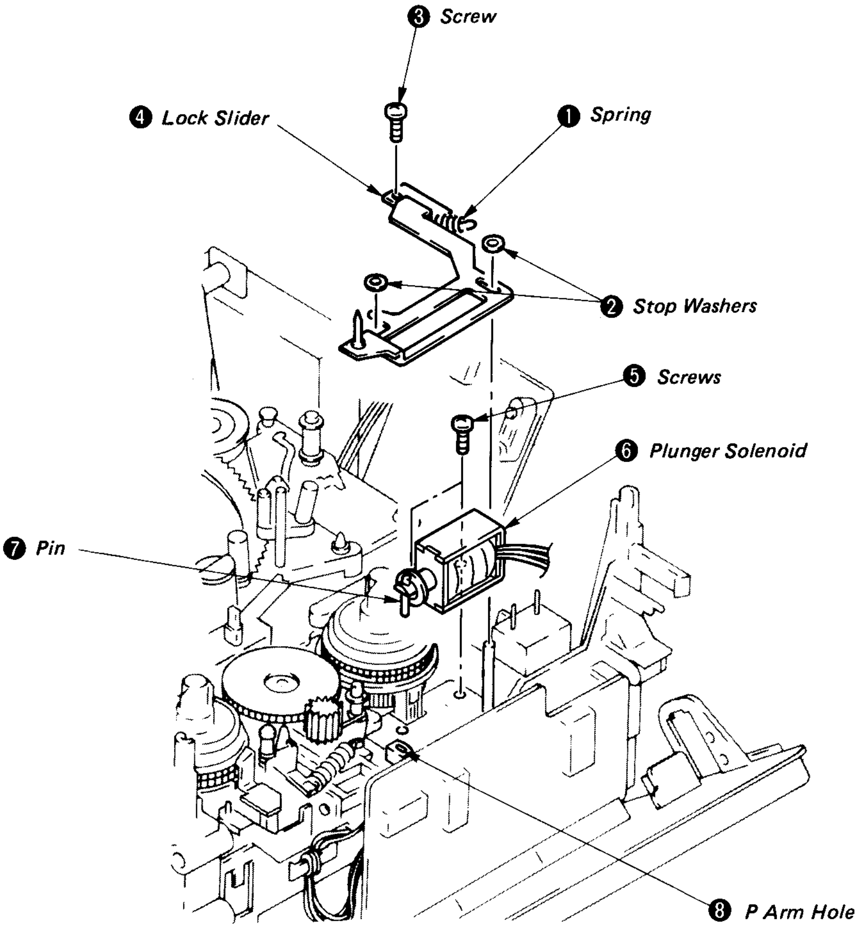


Fig. 2-44

2-3-14. M-SW Assembly

1. Removal

1) Open the MC-8 Board as instructed in 2-1-5, remove the connector CN515 (black) 2P from the RS-5 Board, and extend the wire stretching to the outside.
2) Remove the T reel table assembly as instructed in 2-3-2.
3) Remove the stop washer ❶ and drive gear (B) assembly ❷.
4) Remove the LD-1 mounted PCB. ❸ . (See Fig. 2-45.)
5) Remove the lock slider as instructed in 3), 4), and 5) of 1. Removal in 2-3-13.
6) Remove the spring ❹ and B release arm assembly ❺ .
7) Check that the EJECT mode is set up.
8) Remove the stop wahser ❻ and mode output gear ❼ .
9) Remove the screw ❽ and RECOG SW assembly (S902) ❾ .
10) Disconnect the connector ❿ .
11) Remove three screws ⓫ , control motor cover ⓬ and M-SW assembly ⓭ .
12) Remove solder Ⓐ and the control motor (M903) ⓮ . (See Fig. 2-46.)

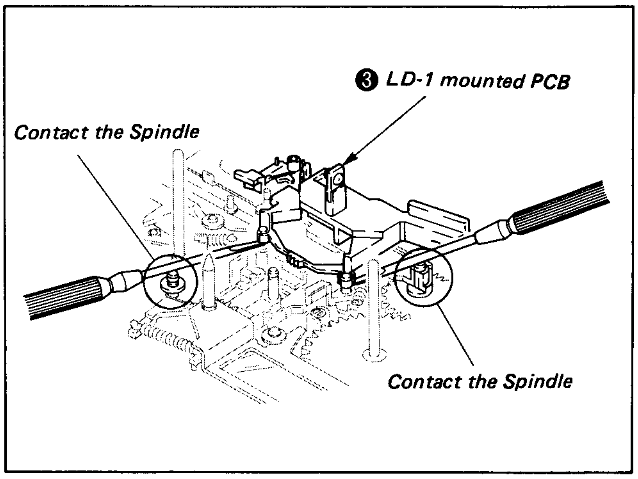

❸ LD-1 mounted PCB
Contact the Spindle
Contact the Spindle

Fig. 2-45

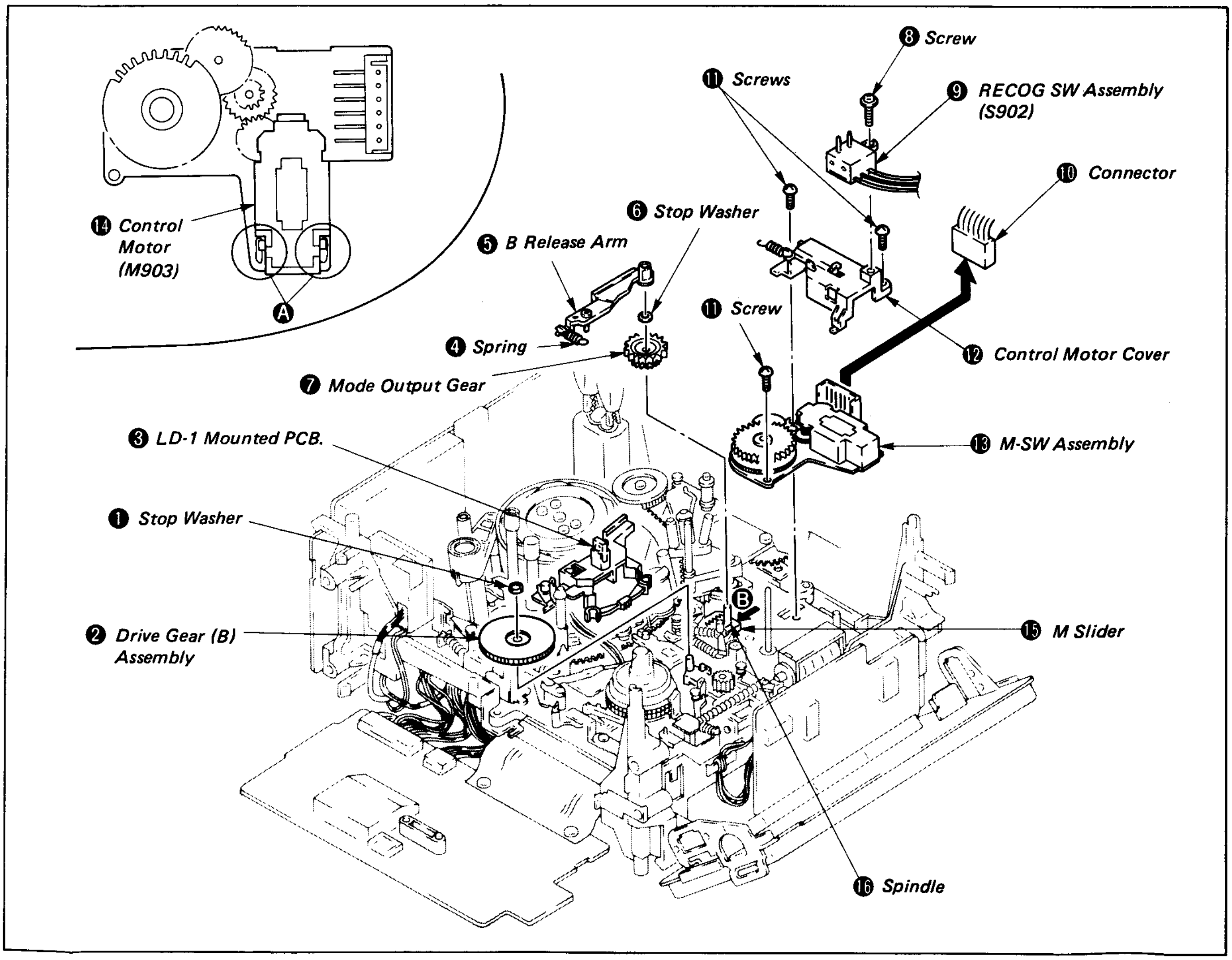

⓮ Control Motor (M903)
Ⓐ
❽ Screw
⓫ Screws
❾ RECOG SW Assembly (S902)
❿ Connector
❻ Stop Washer
❺ B Release Arm
⓫ Screw
❹ Spring
⓬ Control Motor Cover
❼ Mode Output Gear
⓭ M-SW Assembly
❸ LD-1 Mounted PCB.
❶ Stop Washer
Ⓑ
❷ Drive Gear (B) Assembly
⓯ M Slider
⓰ Spindle

Fig. 2-46

2. Remounting

1) Resolder the control motor (M903) ⓮ .
2) Remount the M-SW assembly ⓭ and control motor cover ⓬ and tighten three screws ⓫ .
3) Reconnect the connector ❿ .
4) Remount RECOG SW assembly (S902) ❾ and tighten the screw ❽ .
5) Check that the EJECT mode is set up.
6) Check that the M slider ⓯ is moved toward the arrow Ⓑ fully.
7) Oil half a drop of oil on the spindle ⓰ . (See Fig. 2-46.)
8) Remount the mode output gear ❼ so that the alignment holes are linear. (See Fig. 2-47.)
   Caution required here since there are two holes in the M-SW assembly gear.
9) Refit the stop washer ❻.
10) Set to the LOADING/UNLOADING mode.
11) Remount the B release arm assembly ❺ and rehook the spring ❹.
12) Remount the lock slider as instructed in 2), 3) and 4) of 2. Remounting in 2-3-13.
13) Remount the LD-1 mounted PCB ❸.
14) Remount the drive gear (B) assembly ❷ and refit the stop washer ❶. (See Fig. 2-46.)
15) Remount the T reel table assembly as instructed in 2-3-2.
16) Connect the connector CN515 (black) 2P to the RS-5 Board.

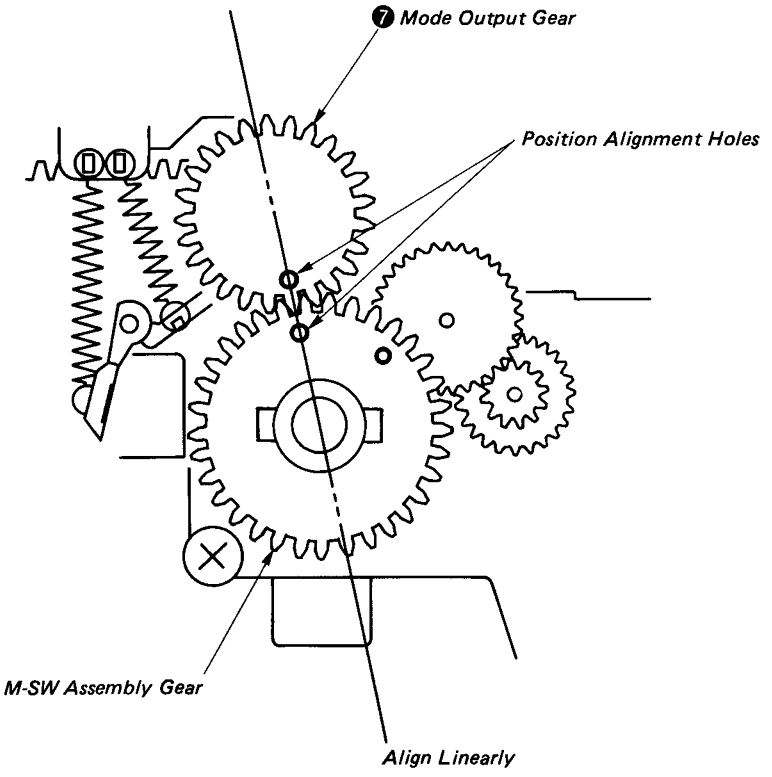


Fig. 2-47

2-3-15. M Slider

1. Removal

1) Open the MC-8 Board as instructed in 2-1-5 and remove the timing belt ① .
2) Remove the pinch press arm assembly as instructed in 2-3-3.
3) Remove the tension regulator arm assembly as instructed in 2-3-4.
4) Remove the tension regulator band assembly as instructed in 2-3-5.
5) Remove the loading ring assembly as instructed in 2-3-7.
6) Perform Steps 1) to 6) of 2-3-14.
7) Remove the tension regulator load arm assembly as instructed in 8) of 1. Removal in 2-3-11.
8) Remove the spring ② .
9) Remove two stop washers ③ , S main brake assembly ④ and T main brake assembly ⑤ .
10) Set up the LOADING TOP and LOADING/UNLOADING modes.
11) Remove two screws ⑥ and the driving arm complete assembly ⑦ .
12) Perform Steps 7) and 8) of 1. Removal in 2-3-14.
13) Remove two springs ⑧ .
14) Remove the REW brake assembly ⑨ .
15) Remove the stop washer ⑩ and B release slider ⑪ .
16) Remove the RVS arm ⑫ .
17) Remove the stop washer ⑬ , spring ⑭ , and RL arm ⑮ .
18) Move the M slider ⑯ toward the right (leave approximately 5mm on the left).
19) Remove the E ring ⑰ and pinch press lever assembly ⑱ .
20) Remove the spring ⑲ and hard brake (S) ⑳ .
21) Remove the stop washer ㉑ , push the mode arm ㉒ toward the arrow Ⓐ , then remove the M slider ⑯ by lifting the lefthand side of the M slider ⑯ . (See Fig. 2-48.)

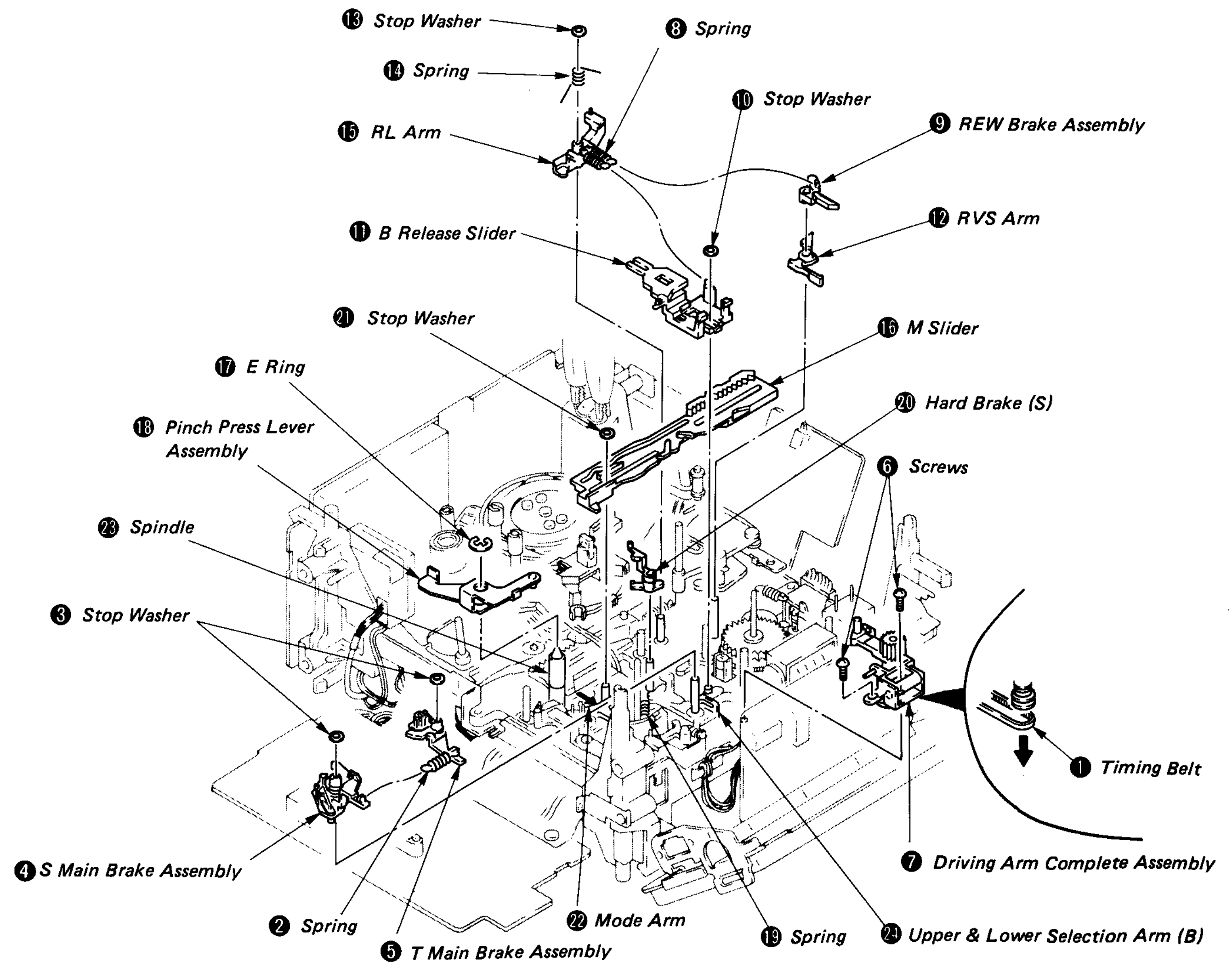

⑬ Stop Washer
⑧ Spring
⑭ Spring
⑩ Stop Washer
⑨ REW Brake Assembly
⑮ RL Arm
⑫ RVS Arm
⑪ B Release Slider
㉑ Stop Washer
⑯ M Slider
⑰ E Ring
⑳ Hard Brake (S)
⑱ Pinch Press Lever Assembly
⑥ Screws
㉓ Spindle
③ Stop Washer
① Timing Belt
④ S Main Brake Assembly
⑦ Driving Arm Complete Assembly
② Spring
㉒ Mode Arm
⑤ T Main Brake Assembly
⑲ Spring
㉔ Upper & Lower Selection Arm (B)

Fig. 2-48

2. Remounting

1) Grease the slider. (See Fig. 2-49.)
2) Push the mode arm ㉒ in the arrow Ⓐ direction, remount the M slider ⑯ referring to Fig. 2-50 and paying attention to the vertical position relationship with other portions of the slider, and refit the stop washer ㉑ . (See Fig. 2-48.)
3) Remount the hard brake (S) ⑳ and rehook the spring ⑲ .
4) Grease as shown in Fig. 2-51.
5) Oil half a drop of oil on the parts below the spindle ㉓ groove, mount the pinch press lever assembly ⑱ , and refit the E ring ⑰ .
6) Remount the RL arm ⑮ , rehook the spring ⑭ , and refit the stop washer ⑬ .
7) Remount the RVS arm ⑫ .
8) Remount the B release slider ⑪ and refit the stop washer ⑩ .
9) Remount the REW brake assembly ⑨ .
10) Rehook two springs ⑧ .

Note: Rehook two springs as noted below so as not to misplace them.
The spring for the B release slider
outside diam: 2mm, wire diam: 0.18mm
The spring for the REW ass'y
outside diam: 1.6mm, wire diam: 0.12mm

11) Move the M slider ⑯ fully to the left.
12) Perform Steps 7), 8) and 9) of 2. Remounting in 2-3-14.
13) Set up the LOADING/UNLOADING mode.
14) Insert the horizontal spindle of the driving arm complete assembly ⑦ in the groove of the upper & lower selection arm (B) ㉔ , insert the lug of the RVS arm ⑫ in the dented part of the driving arm complete assembly ⑦ , and tighten two screws ⑥ .
15) Remount the T main brake assembly ⑤ and S main brake assembly ④ , refit two each stop washers ③ , and refit the spring ② . (See Fig. 2-48.)
16) Remount the tension regulator load arm assembly as instructed in 2) of 2. Remounting in 2-3-11.
17) Perform Steps 11) to 16) of 2. Remounting in 2-3-14.
18) Remount the loading ring assembly as instructed in 2-3-7.
19) Remount the tension regulator band assembly as instructed in 2-3-5.
20) Remount the tension regulator arm assembly as instructed in 2-3-4.
21) Remount the pinch press arm assembly as instructed in 2-3-3.
22) Open the MC-8 Board referring to 2-1-5 and remount the timing belt ① .

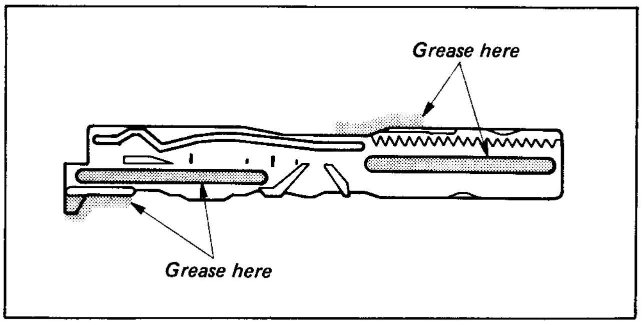


Fig. 2-49

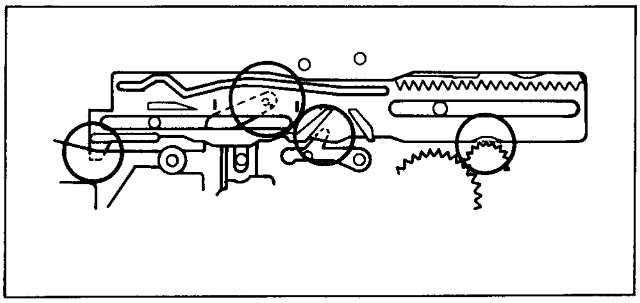


Fig. 2-50

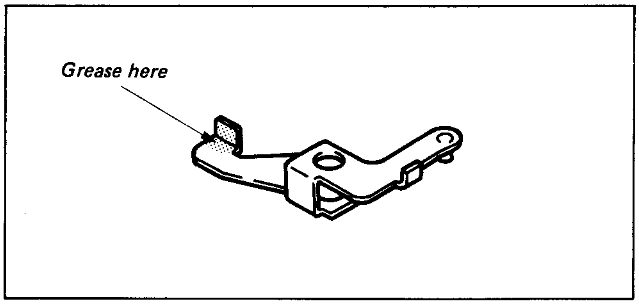


Fig. 2-51

2-3-16. Capstan Motor

1. Removal

1) Remove the tape stopper as instructed in 1) of 1. Removal in 2-3-10.
2) Remove the loading ring assembly as instructed in 2-3-7.
3) Open the MC-8 Board as instructed in 2-1-5 and turn the set upside down.
4) Remove the screw ❶ and the wire holder ❷ .
5) Remove the timing belt ❸ .

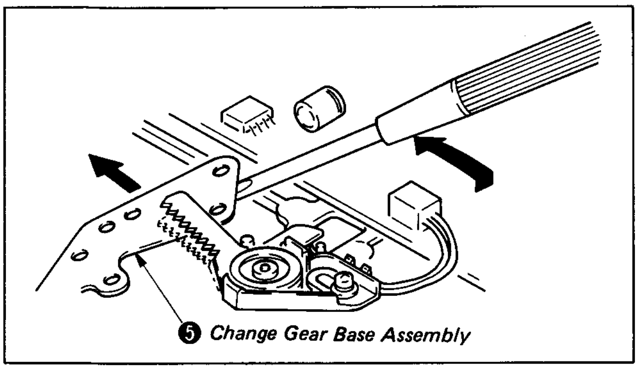

❺ Change Gear Base Assembly

Fig. 2-52

6) Remove the screw ❹ and the change gear base assembly ❺ using a screwdriver. (See Fig. 2-52 and 53.)
7) Disconnect the connectors ❻ and ❼ .
8) Remove two screws ❽ and capstan motor (M902) ❾ as shown by the arrow Ⓐ . (See Fig. 2-53.)

2. Remounting

1) Remount the capstan motor (M902) ❾ and tighten two screws ❽ .
2) Reconnect the connectors ❻ and ❼ .
3) Remount the change gear base assembly ❺ and tighten the screw ❹ .
4) Re-place the timing belt ❸ .
5) Remount the wire holder ❷ and tighten the screw ❶ . (See Fig. 2-53.)
6) Re-place the set in its forward position.
7) Remount the loading ring assembly as instructed in 2-3-7.
8) Remount the tape stopper as instructed in 5) of 2.

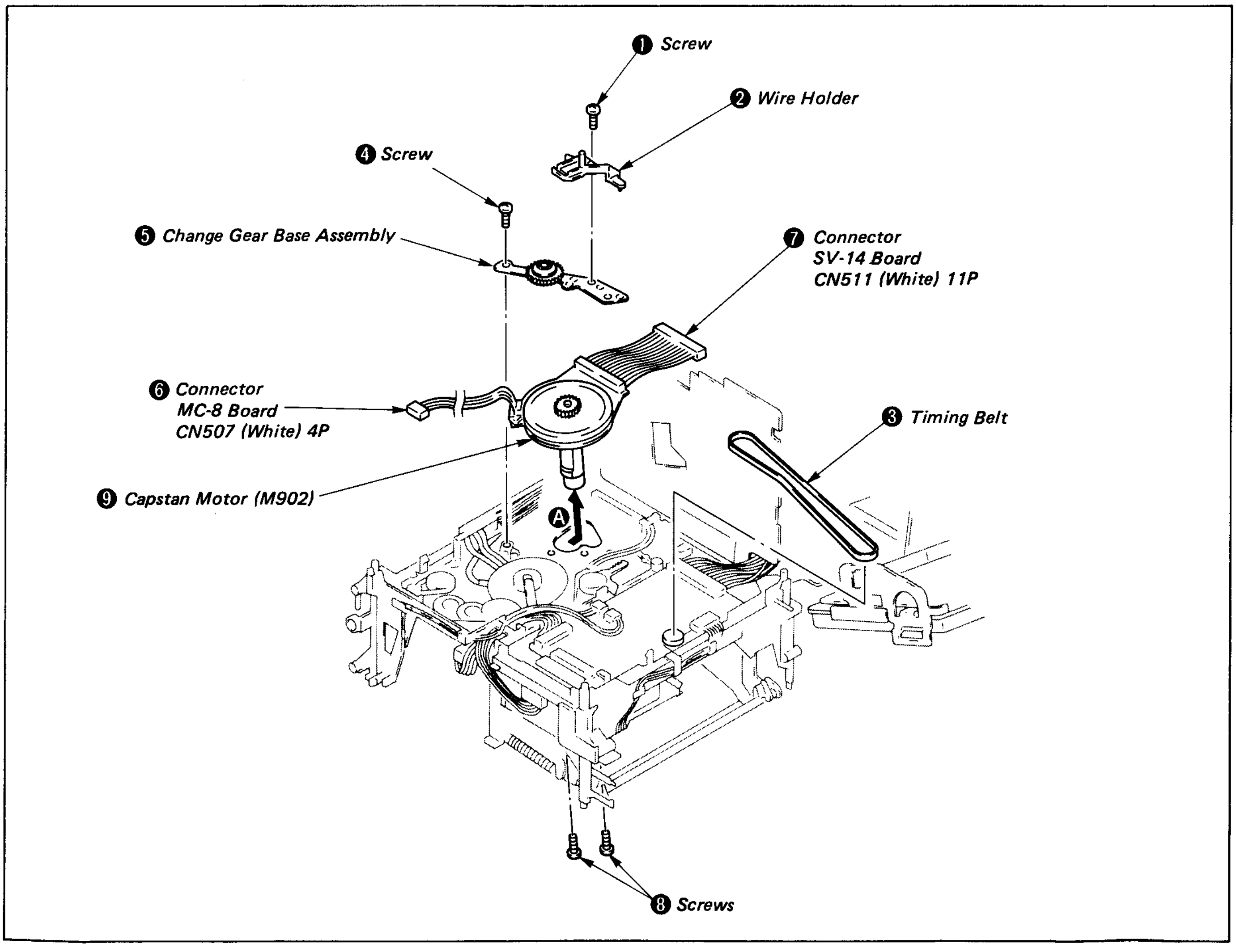

❶ Screw
❷ Wire Holder
❹ Screw
❺ Change Gear Base Assembly
❼ Connector
SV-14 Board
CN511 (White) 11P
❻ Connector
MC-8 Board
CN507 (White) 4P
❸ Timing Belt
❾ Capstan Motor (M902)
Ⓐ
❽ Screws

Fig. 2-53

2-3-17. State of Wear of Video Heads Check

As the accuracy of the check depends on the state of the heads and precision of the checker, the results should be taken only as an indication of the state of wear.

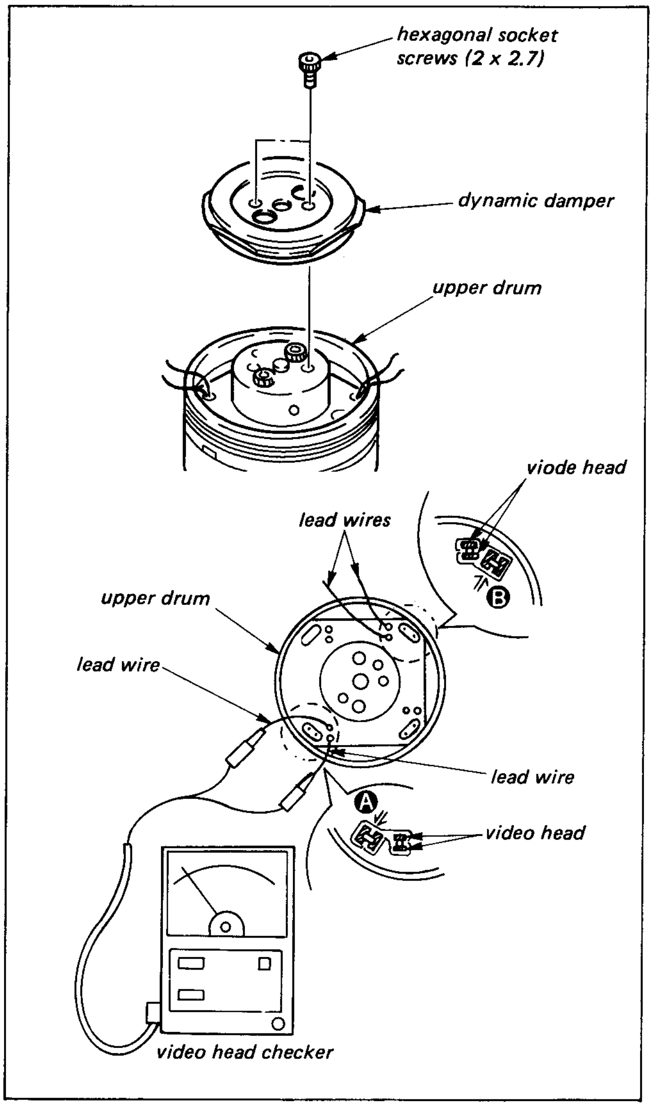
[Adjustment of video head checker]

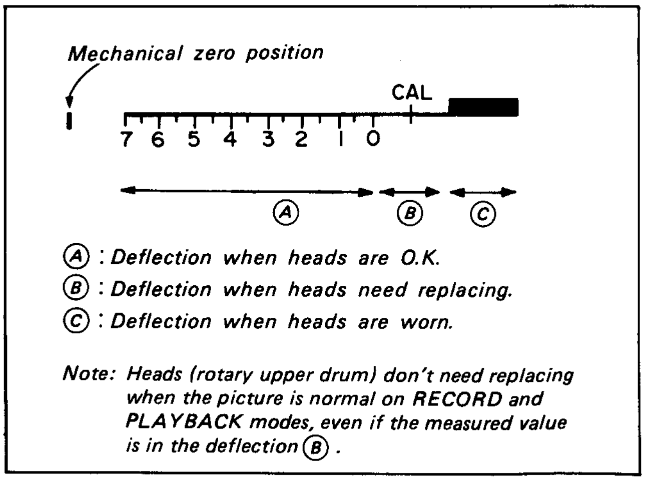
1) Mechanical zero
   Verify that the pointer of the video head checker is at the mechanical zero position. If it is not at this position, adjust the mechanical zero control.
2) Battery voltage check
   Set the MODE switch to "BATT" and set the POWER switch to "ON". The deflection of the pointer should be within the range marked "BATT". If not, replace the battery (use a 6F22 battery) as follows.
3) Calibration check
   Set the POWER switch to "ON" and the MODE switch to "CAL", then adjust the CAL control so that the pointer is on the CAL mark.
   Note 1: Be sure to carry out this adjustment whenever the RANGE switch is changed.
   Note 2: Be sure to check CAL before measuring the head and proceed the measurement after adjusting CAL, if CAL is not properly set.

[Method of measurement]

1) Remove the two hexagonal socket screws (2 x 2.7) and dismount the dynamic damper.
2) Unsolder the portions indicated by the arrow Ⓐ and Ⓑ.
3) Solder the lead wires on the 2 video head.
4) Attach the measuring clips to the head leads.
   Be sure to separate the leads by at least 1.5cm.
5) Set RANGE switch to "A" and MODE switch to "MEAS". The pointer will deflect to indicate the state of wear of the heads.

Note: The deflection for the 2 video heads may be different so be sure to measure both.





Ⓐ : *Deflection when heads are O.K.*
Ⓑ : *Deflection when heads need replacing.*
Ⓒ : *Deflection when heads are worn.*

Note: Heads (rotary upper drum) don't need replacing when the picture is normal on RECORD and PLAYBACK modes, even if the measured value is in the deflection Ⓑ.

MEASURED VALUE

2-3-18. Rotary Upper Drum Replacement

1. Removal

- The rotary upper drum is marked with a colour dot as shown in Fig. 2-54.
- Remove the rotary upper drum after recording in advance if recording is possible.

The color combination of rotary upper drum for replacement.

New Part		Former Part
Part No.	Colour Dot	Colour Dot
A-7049-005-A	Blue or Red	Blue or Red
A-7049-012-A	Black or Green	Black or Green

1) Remove two hexagon socket screws (2 x 2.7) ❶ and dismount the dynamic damper ❷ . (See Fig. 2-54.)
2) Suction solder at all of the soldered six positions Ⓐ . Check that the printed wiring board and pins jutting out from below freely moove using tweezers, or other tool. (See Fig. 2-54.)
3) Remove the two hexagon socket screw (2 x 5) ❸ . (See Fig. 2-54.)
4) Remount the dismounting Jig Ⓑ by the accessory screws ❹ utilizing the screw holes in which the dynamic damper was mounted.
   Drive the hexagon socket screw ❺ into the jig and pulled up the rotary upper drum ❻ . (See Fig. 2-55.)

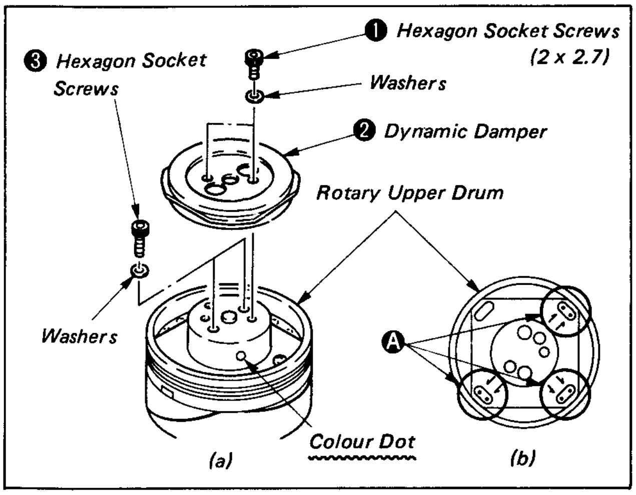

❶ Hexagon Socket Screws (2 x 2.7)
❸ Hexagon Socket Screws
Washers
❷ Dynamic Damper
Rotary Upper Drum
Washers
Ⓐ
Colour Dot
(a)
(b)

Fig. 2-54

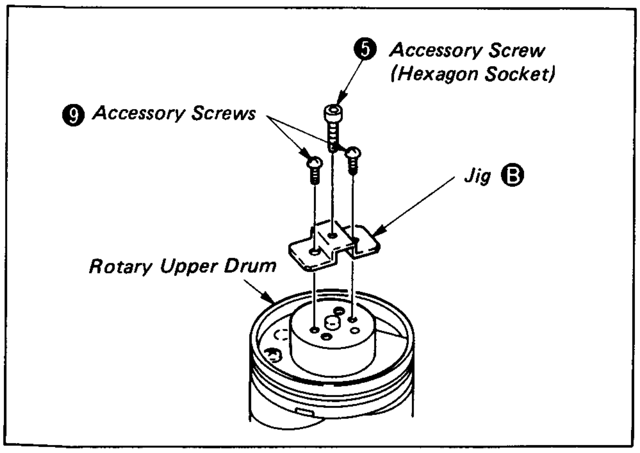

❺ Accessory Screw (Hexagon Socket)
❾ Accessory Screws
Jig Ⓑ
Rotary Upper Drum

Fig. 2-55

2. Remounting

1) Carefully clean the flange surfaces and planes of the rotary upper drum and visually check that no blemishes or flaws are left.
2) Insert Jig Ⓒ in the positioning hole Ⓓ so that the holes of the rotary upper drum ❻ and flange coincide. Lightly insert the rotary upper drum in the drum shaft while aligning their positions. (See Fig. 2-56.) (Check that pins are projecting above the holes on the printed circuit board of the rotary upper drum. When the pins are caught, correct using tweezers, etc.)
3) Remove Jig Ⓒ , lightly push the rotary upper drum by hands. If the rotary upper drum does not go in to the bottom, alternately tighten the two hexagon socket screws (2 x 5) ❸ by hand and temporarily fix them. (See Fig. 2-54 and 2-57.)
4) Reinsert the Jig Ⓒ in the positioning hole and check that the jig can be inserted smoothly. (When the jig cannot be inserted, loosen the two hexagon socket screws (2 x 5) ❸ and slide it inserting a clock screw-driver in the hole.)
5) Tighten the two hexagon socket screws (2 x 5) ❸ .

Note: Do not tighten too strongly.

6) Solder the six positions Ⓐ . (See Fig. 2-54.)

Note: Be careful not to flow solder below the printed wiring board.

7) Tighten the two hexagon socket screws (2 x 2.7) ❶ reversing the screw removal procedure and remount the dynamic damper ❷ . (See Fig. 2-54.)

Note: Do not tighten too strongly.
When remounting, do not mix the hexagon socket screws (2 x 2.7) ❶ and hexagon socket screws (2 x 5) ❸ .

Note: Be sure to adjust the tape path as instructed in 2-4 after remounting.

Note: Replay the recorded tape after adjusting the tape path and before exchanging the rotary upper drum and check that the tape replays properly.

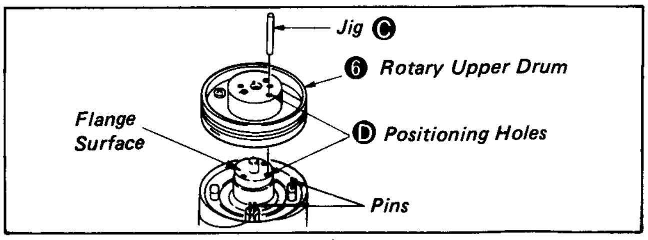

Jig Ⓒ
❻ Rotary Upper Drum
Flange Surface
Ⓓ Positioning Holes
Pins

Fig. 2-56

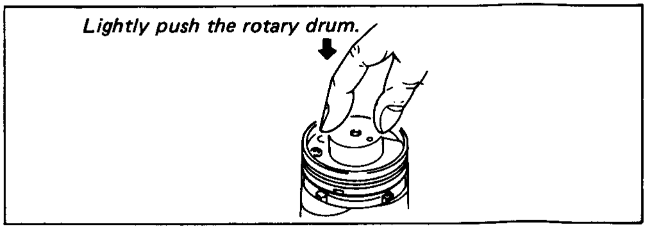

Lightly push the rotary drum.

Fig. 2-57

2-3-19. Drum Assembly Replacement

1. Removal

1) Open the MC-8 Board as instructed in 2-2-5.
2) Remove the screw ❶ and head lead shield plate ❷ .
3) Remove the screw ❸ and shaft ground terminal ❹ . (See Fig. 2-58.)
4) Disconnect six connectors ❺ .
5) Remove two screws ❻ .
6) Remove the drum assembly ❼ . (See Fig. 2-59.)

2. Remounting

1) Remount the drum assembly ❼ and tighten two screws ❻ .
2) Connect six connectors ❺ . (See Fig. 2-59.)
3) Remount the shaft ground terminal ❹ and tighten the screw ❸ .
4) Remount the head lead shield plate ❷ and tighten the screw ❶ . (See Fig. 2-58.)

Note: Be sure to adjust the tape path as instructed in 2-5 after remounting.

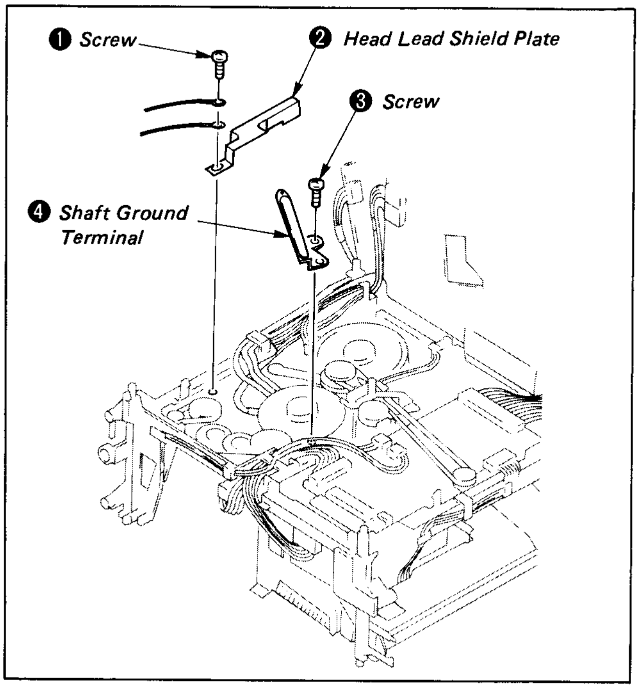

❶ Screw
❷ Head Lead Shield Plate
❸ Screw
❹ Shaft Ground Terminal

Fig. 2-58

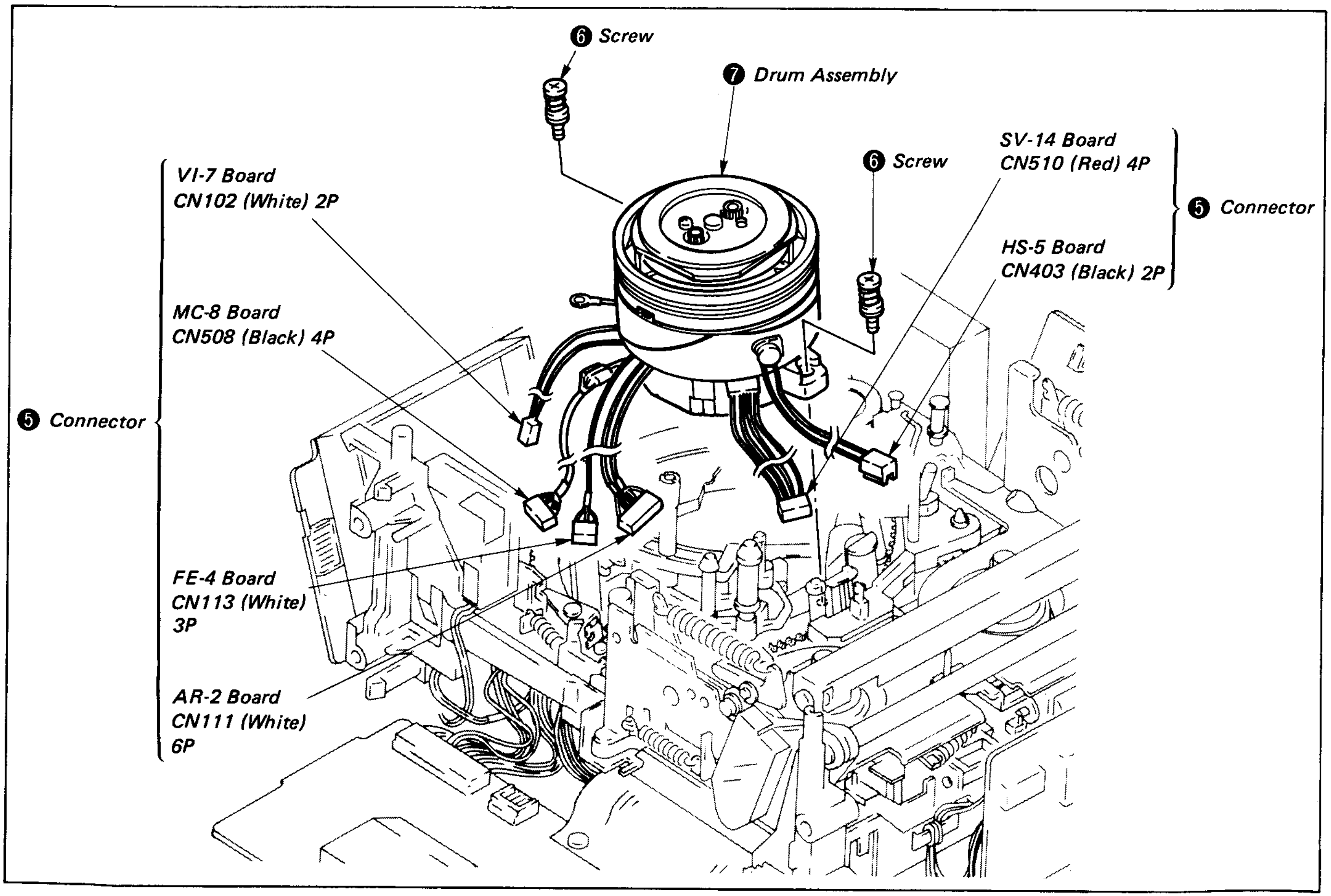

❻ Screw
❼ Drum Assembly
❻ Screw
VI-7 Board CN102 (White) 2P
MC-8 Board CN508 (Black) 4P
❺ Connector
FE-4 Board CN113 (White) 3P
AR-2 Board CN111 (White) 6P
SV-14 Board CN510 (Red) 4P
HS-5 Board CN403 (Black) 2P
❺ Connector

Fig. 2-59

2-3-20. Adjustment After Replacing No. 3 and 4 Guides

Run the tape on the upper flanges for both No. 3 and 4 guides after replacing them. (See Fig. 2-96.)

2-3-21. No. 5 Guide Assembly

1. Removal

1) Remove the tape stopper as instructed in 1) of 1. Removal in 2-3-10.
2) Remove three screws ❶ and No. 5 guide assembly.
3) Remove the guide nut ❷ , the spring ❸ and the shaft 4 . (See Fig. 2-60.)

2. Remounting

1) Reinsert the spring ❸ in the shaft ❹ , reengage the dent and bump in the lower parts, and tighten the guide nut ❷ .
2) Remount the No. 5 guide assembly and tighten three screws ❶ . (See Fig. 2-60.)
3) Remount the tape stopper as instructed in 5) of 2. Remounting in 2-3-10.

Note: Be sure to adjust the tape path as instructed in 2-4 after remounting.

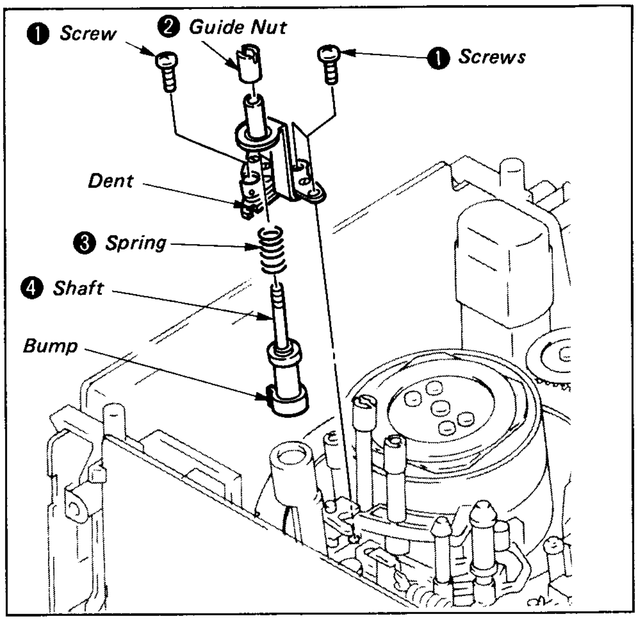

❶ Screw
❷ Guide Nut
❶ Screws
Dent
❸ Spring
❹ Shaft
Bump

Fig. 2-60

2-3-22. FWD Back Tension Adjustment

1) Set up the LOADING END and FWD modes.
2) Loosen the screw ❷ of the band adjustment plate ❶ , adjust the slit ❸ and pin ❹ of the tension regulator arm assembly to be in the position shown by the arrow Ⓐ in the Fig. 2-61, then tighten the screw ❷ .
3) Place the reel (Ref. No. J-7) ❻ to measure tensions on the S reel table ❺ and run a tape along No. 1, 2 and 3 guides and the drum.
4) Pull the dial tension gauge (Ref. No. J-6) ❼ in the arrow Ⓑ direction and re-place the spring ❾ on the tension regulator spring hook assembly ❽ as mentioned below so that the value becomes 13.0 ±1g. (See Fig. 2-61.)

Larger than standard . . . . .Arrow Ⓒ direction
Smaller than standard. . . . . Arrow Ⓓ direction

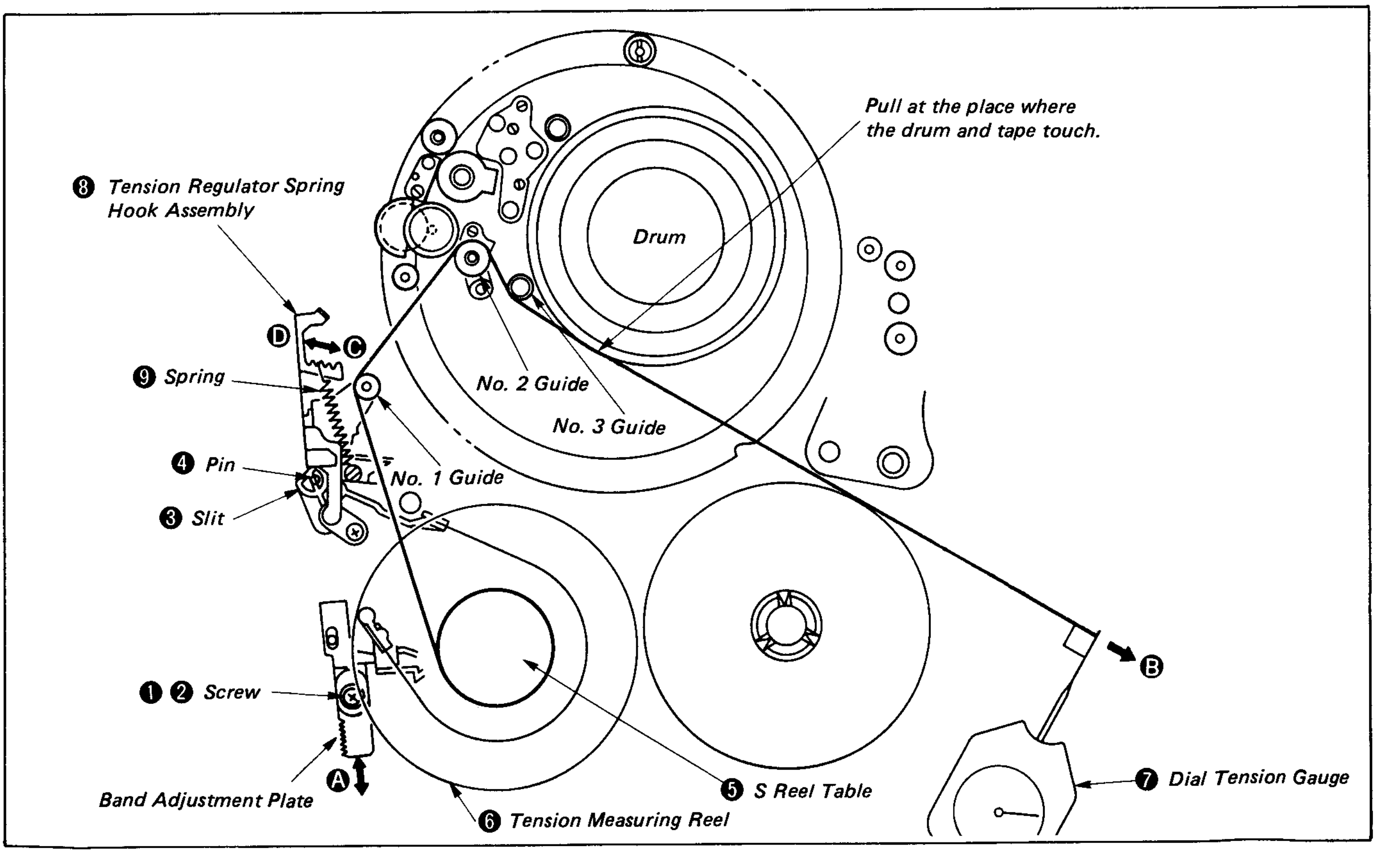

Pull at the place where the drum and tape touch.
❽ Tension Regulator Spring Hook Assembly
Drum
Ⓓ
Ⓒ
❾ Spring
No. 2 Guide
No. 3 Guide
❹ Pin
No. 1 Guide
❸ Slit
Ⓑ
❶ ❷ Screw
Band Adjustment Plate
Ⓐ
❺ S Reel Table
❻ Tension Measuring Reel
❼ Dial Tension Gauge

Fig. 2-61

2-3-23. Checking and Adjustment of Timing Belt Tension

1) Remove the timing belt. (Refer to 1) of 1. Removal in 2-3-15.)
2) Cover the LED photodetector section (HS-5 Board) for tape end detection with a vinyl tape, and load.
3) Short TP603 and TP604 on the SK-4 Board. (See Fig. 2-62.)
4) Disengage the pinch press arm side (round hook side) of the tension spring hooked on the pinch press arm assembly. (See Fig. 2-63.)
5) Hold the safety pin of the RECOG switch (rec proof side) and tape it. press the REC button to set up the REC mode. (See Fig. 2-64.)
6) Measure the voltage (Vo) between CAP I1 and CAP I2 on the SV-14 Board using an analog tester. (No-load state) (See Fig. 2-65.)
7) Remount the timing belt. (Refer to 4) of 2. Remounting in 2-3-16.
8) Remove the driving gear (B) assembly as instructed in 3) of 1. Removal in 2-3-14.
9) Measure the voltage (Vx) between CAP I1 and CAP I2 as in 6) after setting up the REC mode as mentioned in 5). (When adjusting the belt tension.)
10) Check that the voltage (Vx) during tension adjustment is 22 to 44mV higher than the voltage (Vo) in a no-load state. Adjust as follows if the voltage is not as required.

Adjustment Method:

i) Loosen the screw ❶ , slide the idler assembly as shown by the arrow Ⓐ , and fix it by tightening the screw ❶ . (See Fig. 2-66.)
ii) Recheck after performing Step 9).
iii) Repeat i) and ii) until the standard is satisfied.

11) Remove the short between TP603 and TP604 on the SK-4 Board.
12) Remount the driving gear (B) assembly and the tension spring of the pinch press arm assembly.

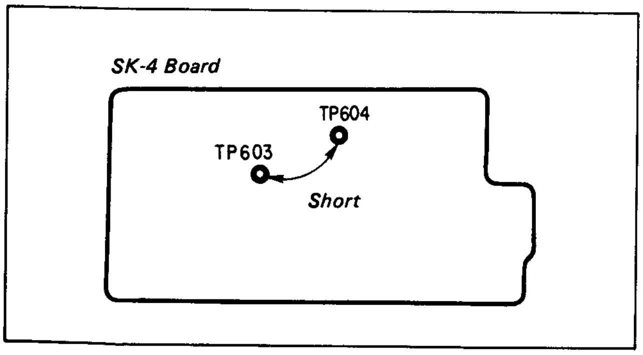


Fig. 2-62

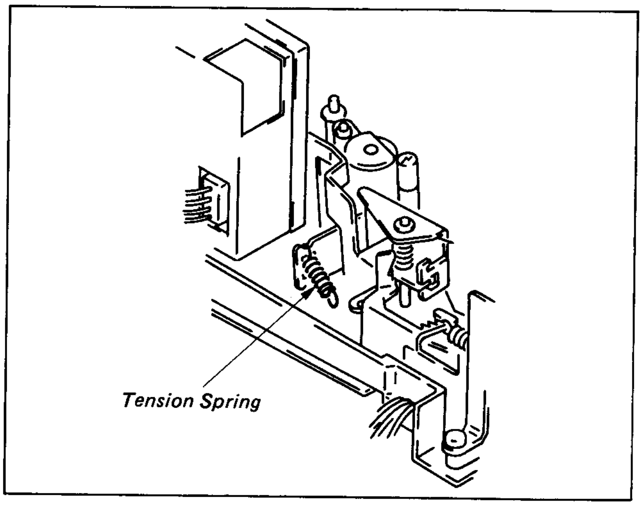


Fig. 2-63

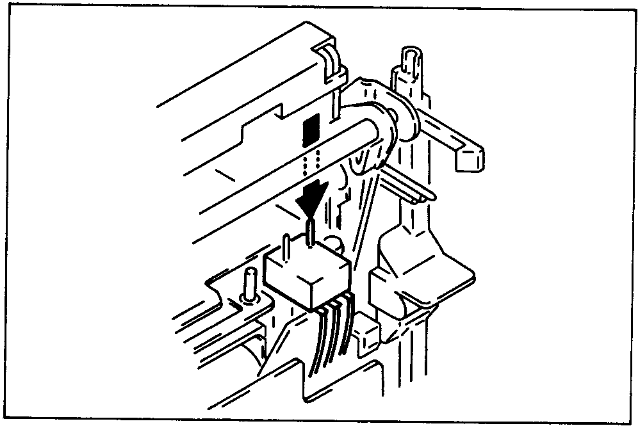


Fig. 2-64

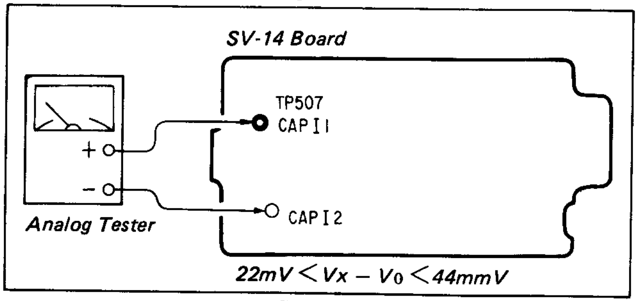


Fig. 2-65

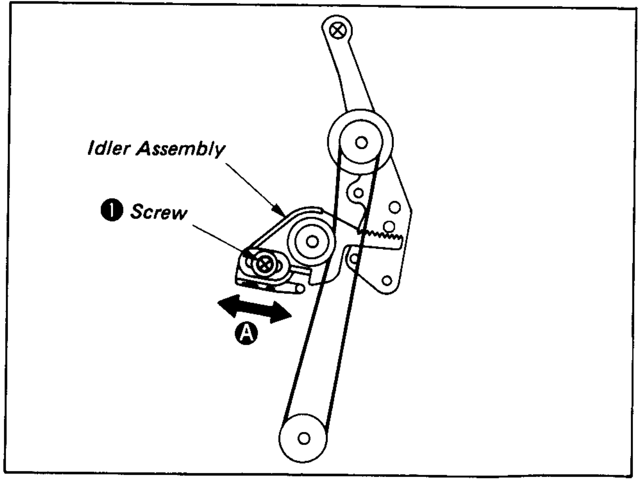


Fig. 2-66

2-3-24. Checking S and T Main Brake Torques

1) Open the control panel as instructed in 2-1-1.
2) Remove the cassette compartment assembly as instructed in 2-1-6.

1. S main brake torque

1) Set up the FF/REW mode.
2) place the tension measuring reel (Ref. No. J-8) on the S reel table.
3) Pull the dial tension gauge (Ref. No. J-6) toward the arrow and check that the value satisfies the required value. (See Fig. 2-67 and 68.)

2. T main brake torque

1) Set up the FF/REW mode.
2) Place the tension measuring reel (Ref. No. J-8) on the T reel table.
3) Pull the dial tension gauge (Ref. No. J-6) toward the arrow and check that the value satisfies the required value. (See Fig. 2-69 and 70.)

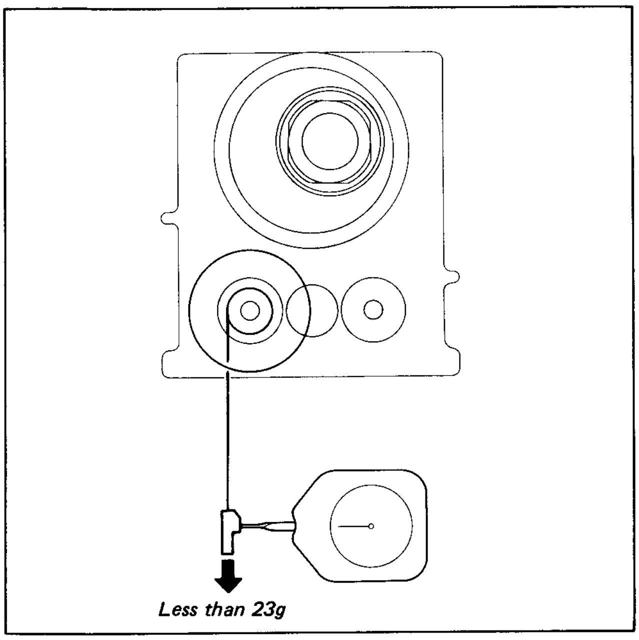


Fig. 2-67

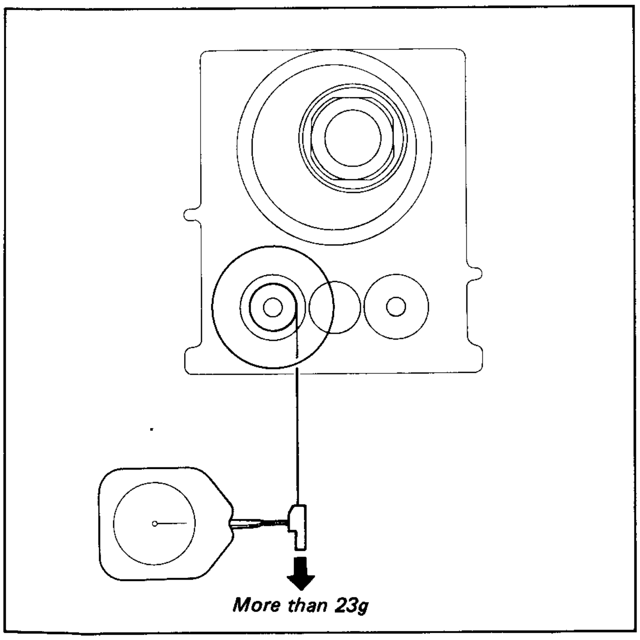


Fig. 2-68

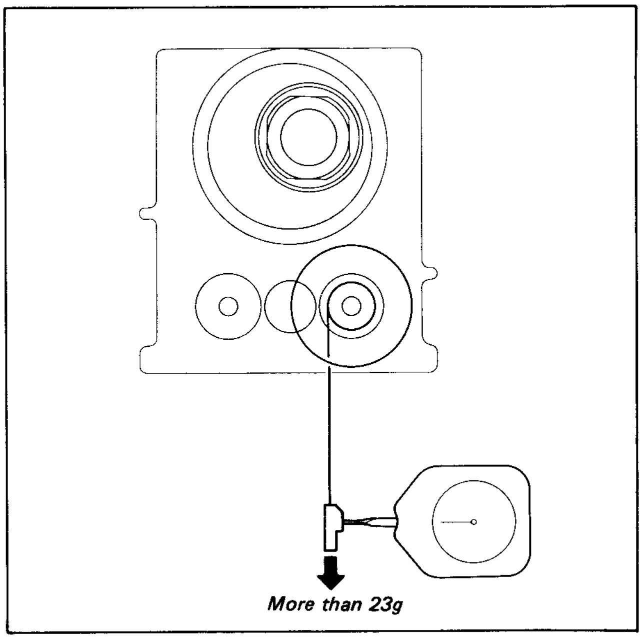


Fig. 2-69

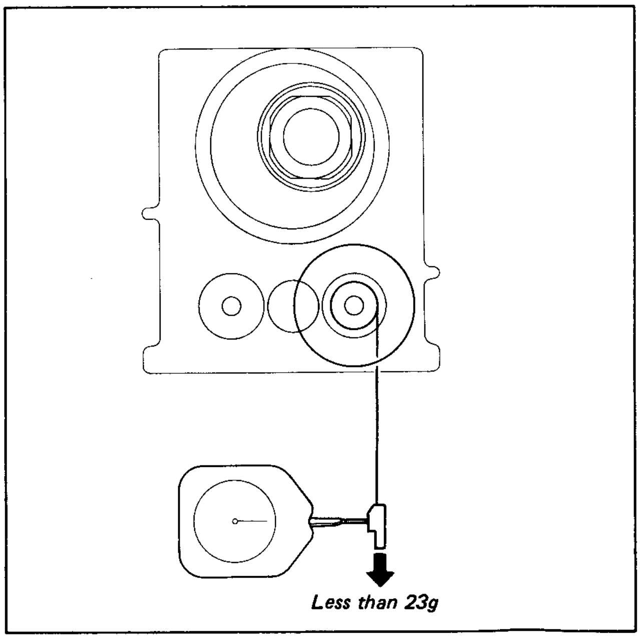


Fig. 2-70

2-3-25. Checking S and T Saft Brake Torques

1) Open the control panel as instructed in 2-1-1.
2) Remove the cassette compartment assembly as instructed in 2-1-6.

1. S soft brake torque

1) Set up the FF/REW mode.
2) Place the tension measuring reel (Ref. No. J-8) on the S reel table.
3) Release the S main brake with a finger.
4) Pull the dial tension gauge (Ref. No. J-6) toward the arrow and check that the value satisfies the required value. (See Fig. 2-71.)

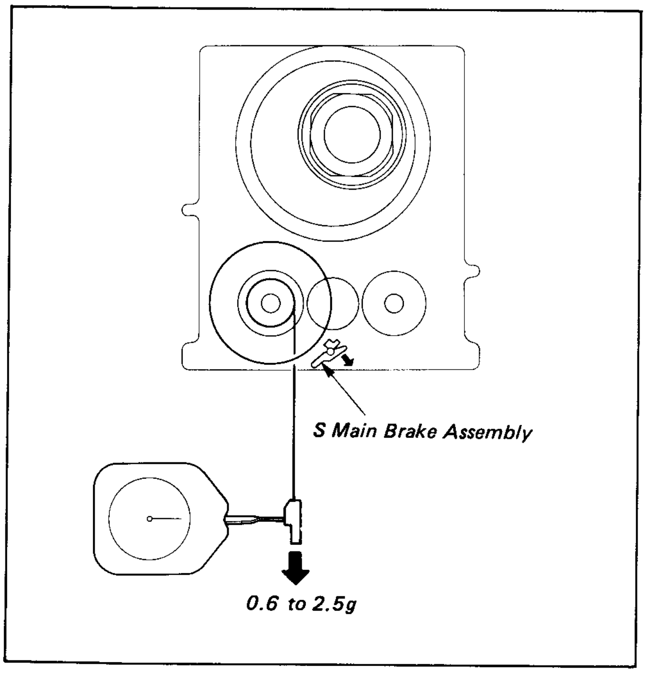


Fig. 2-71

2. T soft brake torque

1) Set up the REV mode.
2) Place the tension measuring reel (Ref. No. J-8) on the T reel table.
3) Release the T main brake with a finger.
4) Pull the dial tension gauge (Ref. No. J-6) toward the arrow and check that the value satisfied the required value. (See Fig. 2-72.)

Note: In the REV mode, both the T soft brake and REW brake are engaged.

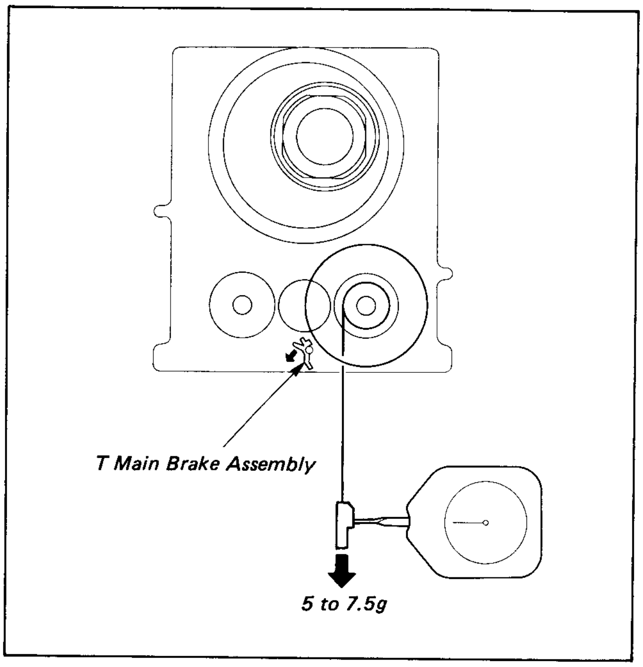


Fig. 2-72

2-3-26. Checking REV and REW Brake Torques

1) Open the control panel as instructed in 2-1-1.
2) Remove the cassette compartment assembly as instructed in 2-1-6.

1. REV brake torque

1) Set up the REV mode.
2) Place the tension measuring reel (Ref. No. J-8) on the S reel table.
3) Release the S main brake assembly with a finger.
4) Pull the dial tension gauge (Ref. No. J-6) toward the arrow and check that the value satisfies the required value. (See Fig. 2-73.)

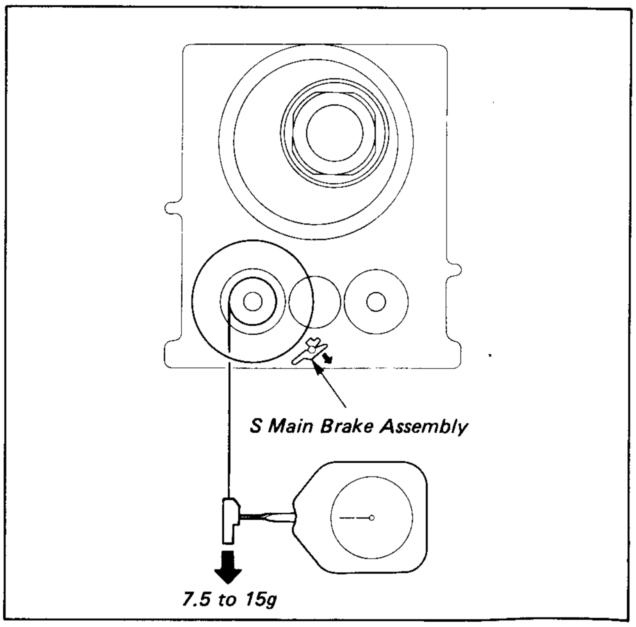


Fig. 2-73

2. REW brake torque

1) Set up the FF/REW mode.
2) Place the tension measuring reel (Ref. No. J-8) on the T reel table.
3) Pull the dial tension gauge (Ref. No. J-6) toward the arrow and check that the value satisfies the required value. (See Fig. 2-75.)

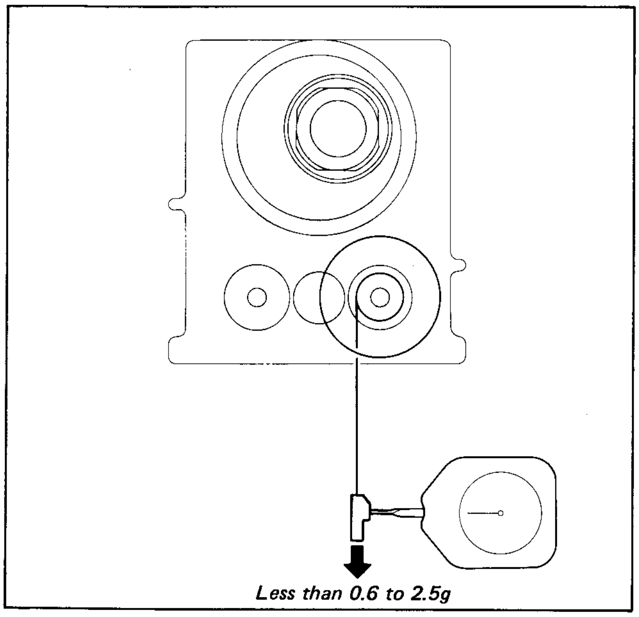


Fig. 2-75

2-3-27. Checking by FWD and RVS Take-Up Torque Cassette

1) Set the FWD and RVS take-up torque cassette (Ref. No. J-12).
2) Set up the PLAY BACK mode and check that the torque value on the T reel table side is 9.5 to 15.5g·cm.
3) Set up the PLAY BACK mode and check that the torque value on the S reel table side immediately after pressing the REW button is 17 to 23g·cm.
4) Replace the reel tables if the foregoing values are not satisfied.

2-4. TAPE PATH ADJUSTMENT

- **Make tape path adjustment after checking that electrical adjustment is made.**

2-4-1. Preparation for Adjustment

1) Clean the parts on which the tape runs (tape guide, drum, capstan spindle and pinch roller).
2) Connect an oscilloscope as follows:
   1CH: Pin ③ of CN112 (AR-2 Board): CH-2 output
   2CH: Pin ② of CN112 (AR-2 Board): External trigger
   (See Fig. 2-76.)

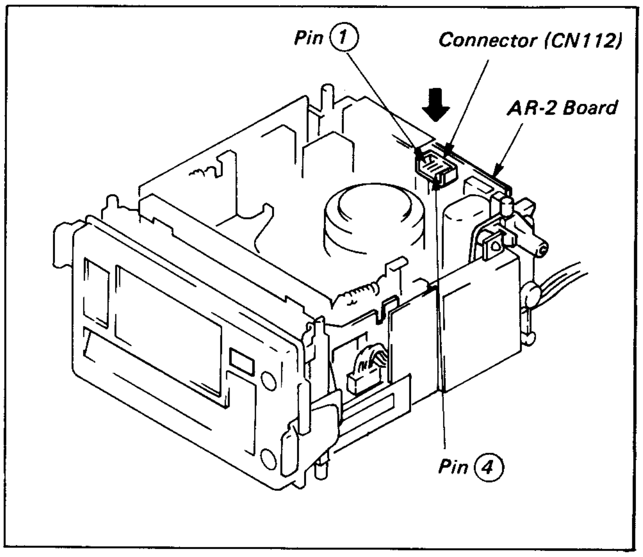


Fig. 2-76

3) Replay the tracking alignment tape (WR5-1C) and check that the RF waveforms are flat (Fig. 2-77 ⓐ) on the inlet and outlet sides. If not, adjust as follows.

- If RF waveform on inlet side is not flat. (Fig. 2-77 ⓑ). . . Adjust as instructed in 2-4-2 Inlet side adjustment.
- If RF waveform on outlet side is not flat. (See Fig. 2-77 ⓒ) . . . Adjust as instructed in 2-4-3 Outlet side adjustment.

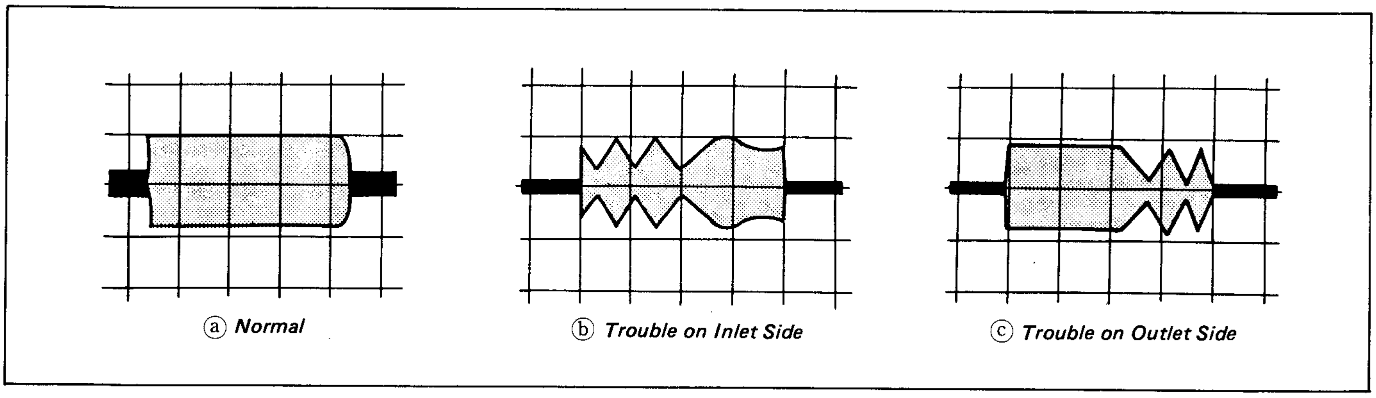

ⓐ Normal
ⓑ Trouble on Inlet Side
ⓒ Trouble on Outlet Side

Fig. 2-77

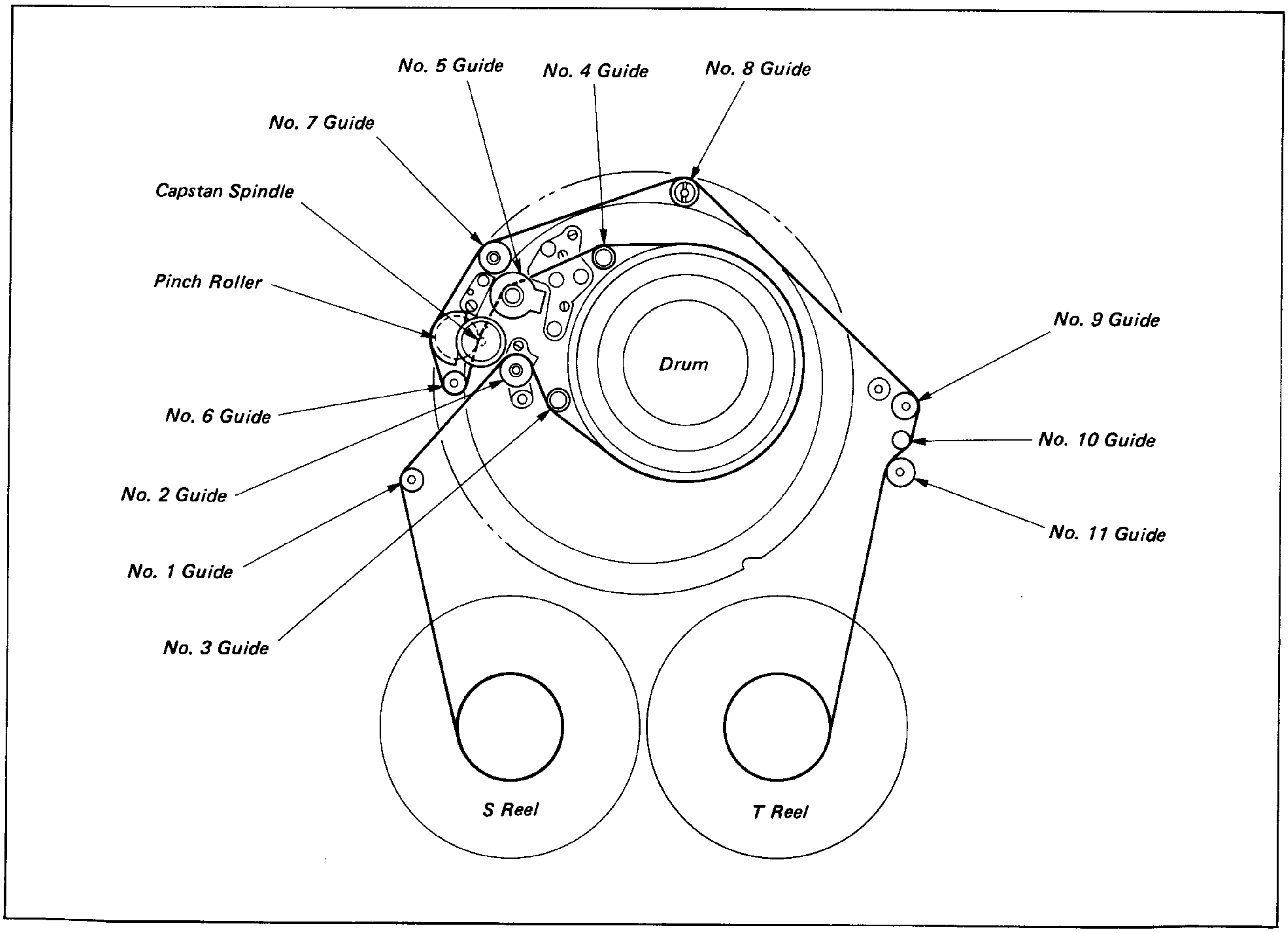

No. 5 Guide
No. 4 Guide
No. 8 Guide
No. 7 Guide
Capstan Spindle
Pinch Roller
No. 6 Guide
No. 2 Guide
No. 1 Guide
No. 3 Guide
Drum
No. 9 Guide
No. 10 Guide
No. 11 Guide
S Reel
T Reel

Fig. 2-78 Tape Guide Layout

2-4-2. Inlet Side Adjustment

1) Replay the tracking alignment tape, loose No. 2 guide lock screw ❶ , rotate No. 2 and 3 guides counterclockwise, and free the tape run on the inlet side. (See Fig. 2-79.)

   Note: The space between the top and bottom flanges of No. 2 guide is narrow. Check that the tape is contacting neither top nor bottom flanges this time. The tape contacts the bottom flange and the RF waveform on the inlet side will have more than four ridges if No. 2 guide is too loose.

2) Check that the RF waveform on the inlet side has 1 to 4 ridges in this condition. If not, adjust as follows. (See Fig. 2-80.)

   Note: Do not touch the No. 2 guide gate screw ❷ since it has been preset at the factory.
   If off standard, adjust the height adjustment screw of the No. 1 guide (tension regulator assembly) by turning it clockwise 90° at a time. (See Fig. 2-81)

3) Slowly rotate No. 2 guide clockwise to make the inlet side waveform nearly flat. (See Fig. 2-82.)

   Note: Do not rotate No. 2 guide excessively.

4) Rotate No. 3 guide clockwise to make the inlet side waveform completely flat, then rotate clockwise slightly (approximately 15°). (See Fig. 2-83.)
5) Check the tape curl of No. 3 guide flange. If tape is curled, rotate No. 2 guide clockwise little by little until the curling is eliminated.
6) Tighten No. 2 lock screw ❶ . (See Fig. 2-79.)

   Note: Check the adjustment as mentioned in 2-4-4.

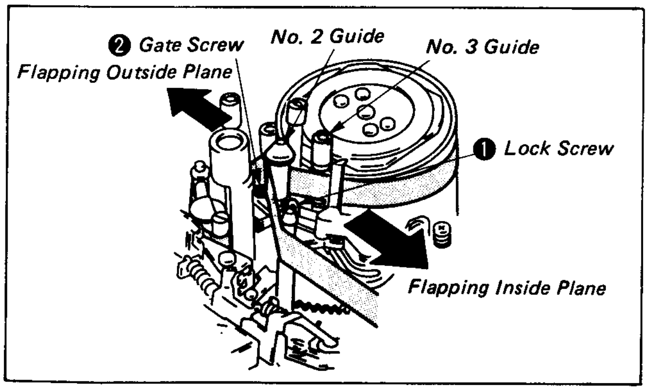

❷ Gate Screw
No. 2 Guide
No. 3 Guide
Flapping Outside Plane
❶ Lock Screw
Flapping Inside Plane

Fig. 2-79

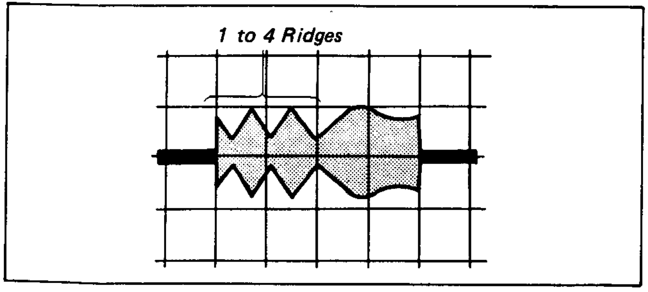

1 to 4 Ridges

Fig. 2-80

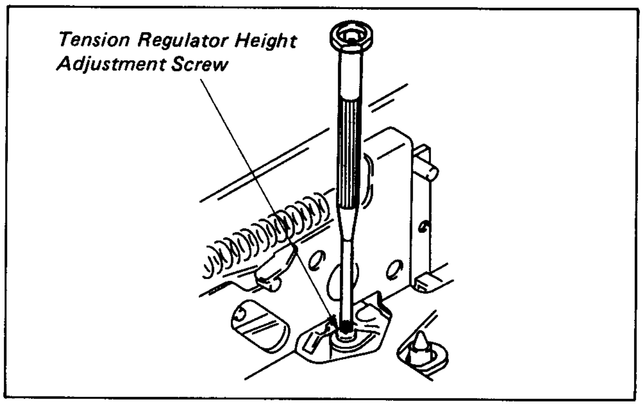

Tension Regulator Height Adjustment Screw

Fig. 2-81

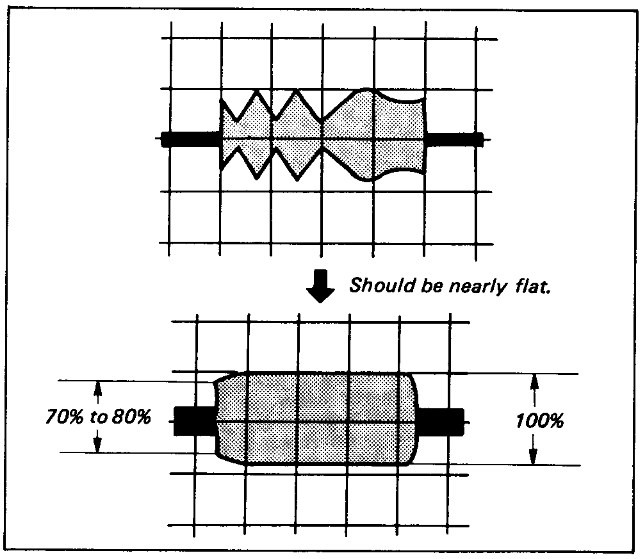

Should be nearly flat.
70% to 80%
100%

Fig. 2-82

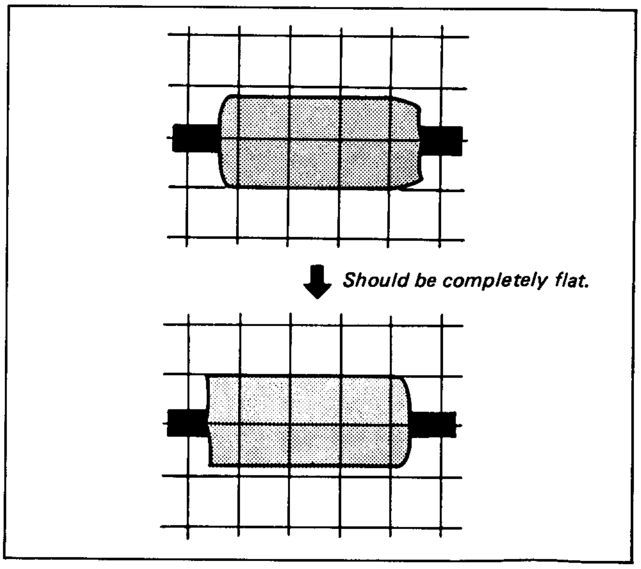

Should be completely flat.

Fig. 2-83

2-4-3. Outlet Side Adjustment

- Start this adjustment by removing the tape stopper as instructed in 1) of 1. Removal in 2-3-10.

1) Play back the tracking alignment tape, rotate No. 4 guide counterclockwise and No. 5 guide clockwise, respectively, then free the tape running on the outlet side. (See Fig. 2-84.)

   Note:
   - A screw lock agent sticking No. 5 guide nut may prevent the nut from rotating. Rotate the guide after immersing alcohol in the nut thread and dissolving the screw lock agent.
   - Check that the tape is not contacting the top and bottom flanges of No. 5 guide during free tape running.

2) Check that the RF waveform on the outlet side has 1.5 to 3.5 ridges. If not, readjust as follows. (See Fig. 2-85.)

If off standard

   i) Rotate the lock screw ❶ counterclockwise to loosen.
   ii) Slowly rotate the gate screw ❷ by 45° and wait until the RF waveform changes.
   iii) Rotate the lock screw ❶ clockwise to tighten. (See Fig. 2-84.)

   Note:
   - The waveform changes if the lock screw is tightened too tightly. Tighten moderately.
   - Never rotate the azimuth screw of No. 5 guide.

3) Rotate No. 5 guide counterclockwise to make the RF waveform on the outlet side nearly flat. (See Fig. 2-86.)

   Note: The waveform reaction is slow to nut rotation. Rotate the nut after the waveform variations are stabilized.

4) Rotate No. 4 guide clockwise to make the RF waveform on the outlet side completely flat and slightly rotate clockwise (approximately 15°) from this condition. (See Fig. 2-87.)

5) Check tape curling of No. 4 guide flange. Rotate No. 5 guide nut counterclockwise little by little until curling is eliminated if the tape is curled.

   Note: Be sure to check as mentioned in 2-4-4 after making the adjustment.

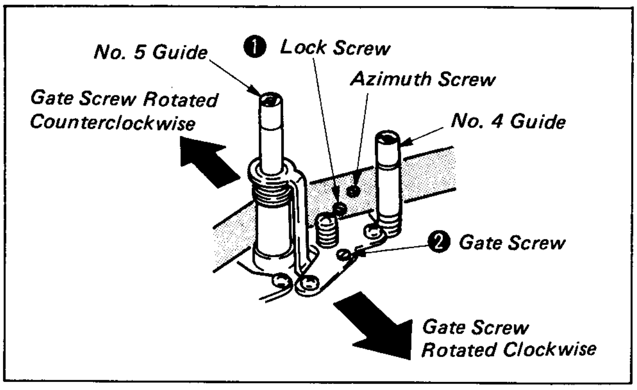

No. 5 Guide
❶ Lock Screw
Azimuth Screw
Gate Screw Rotated Counterclockwise
No. 4 Guide
❷ Gate Screw
Gate Screw Rotated Clockwise

Fig. 2-84

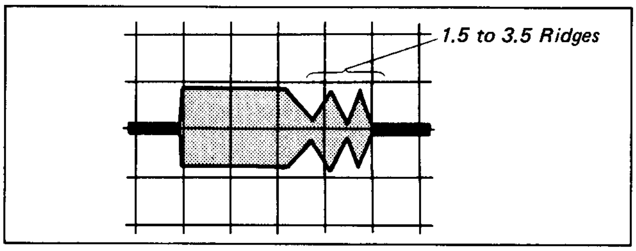

1.5 to 3.5 Ridges

Fig. 2-85

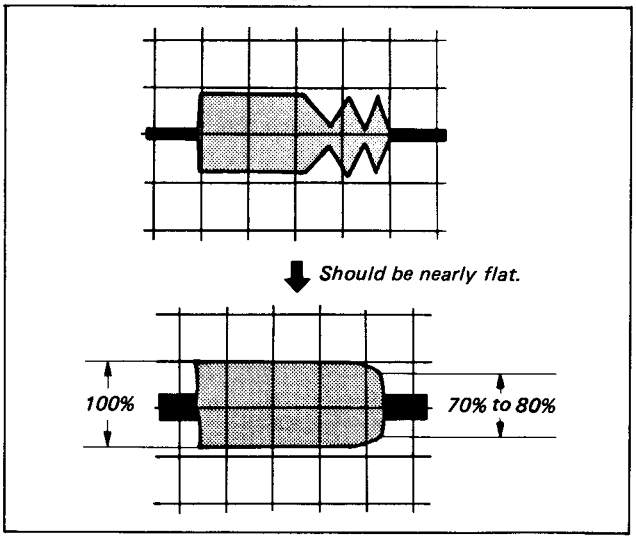

Should be nearly flat.
100%
70% to 80%

Fig. 2-86

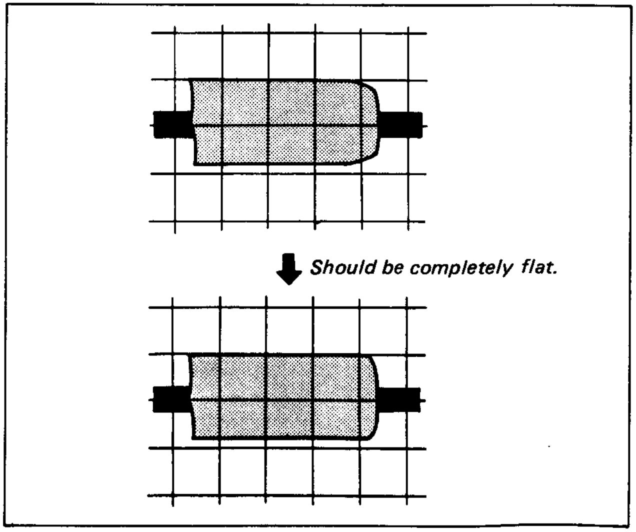

Should be completely flat.

Fig. 2-87

2-4-4. Checking After Adjustment

1. Tracking check

1) Record TV signals, play back recorded signals, and check that quality of both pictures and sounds is satisfactory.
2) Play back the tracking alignment tape and check that RF waveforms do not have large variations.
3) Set up the REV mode and check that the waveform noise pitches are uniform. If not, adjust as follows. (See Fig. 2-88.)

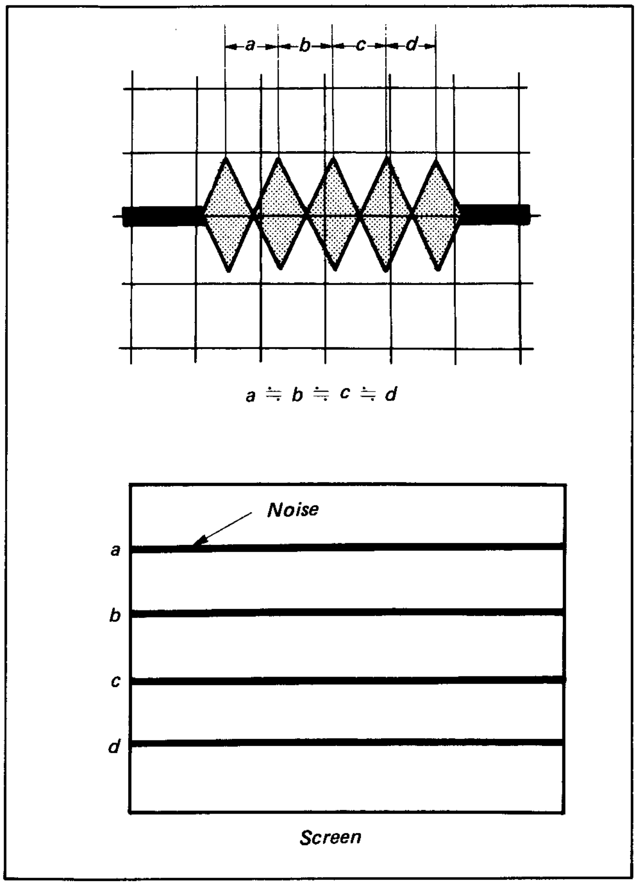


Fig. 2-88

[Narrow noise pitch on inlet side (upper screen)]

(See Fig. 2-89.)

Check that the RF waveforms are flat in the PLAYBACK mode.

Waveform is not flat:

Adjust the heights of No. 2 and 3 guides as in 2-4-2 Inlet side adjustment.

Waveform is flat:

Rotate No. 1 guide (tension regulator height adjusting screw) and No. 2 guide gate screw 90° counterclockwise to recheck. (See Fig. 2-81.)

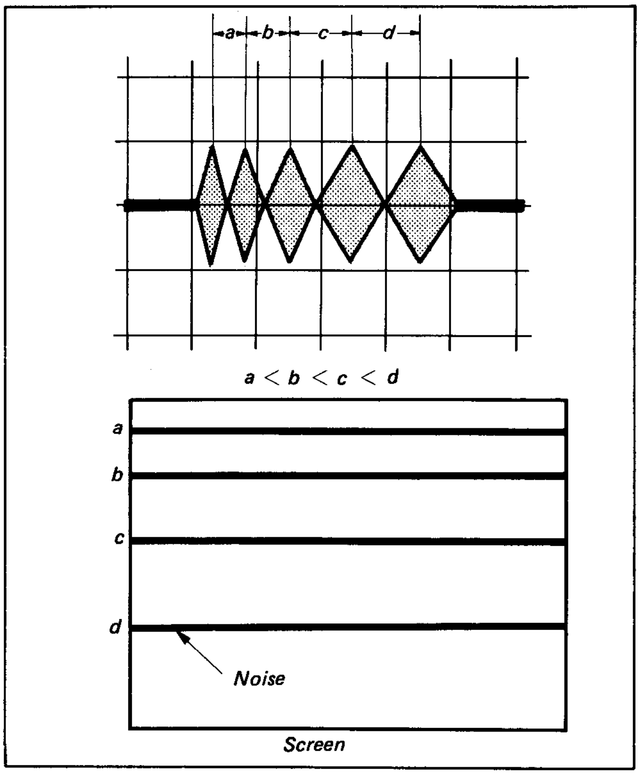


Fig. 2-89

[Narrow noise pitch on outlet side (lower screen)]

(See Fig. 2-90.)

Set up the PLAYBACK mode and adjust No. 4 and 5 guide heights as in 2-4-3. Outlet side Adjustment.

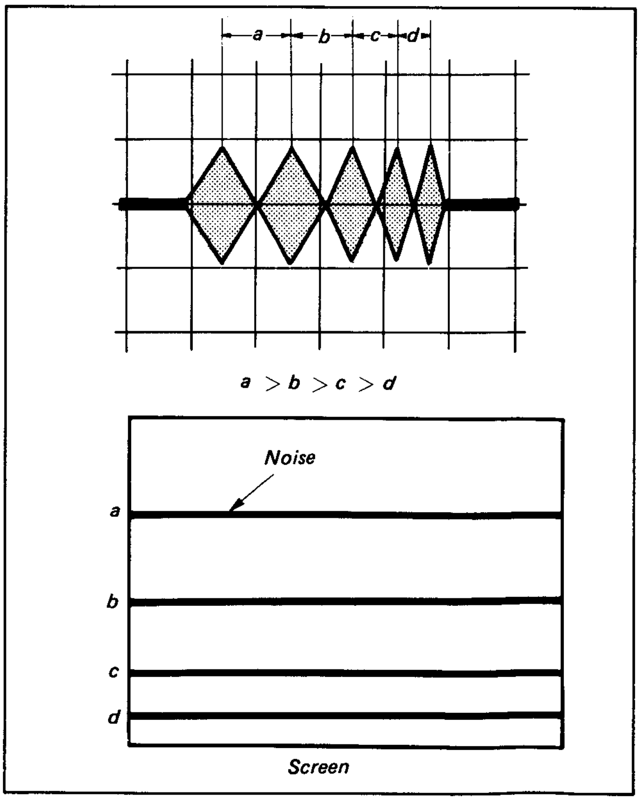


Fig. 2-90

[Wide noise pitch on outlet side (lower screen)]

(See Fig. 2-91.)

Set up the PLAYBACK mode and check that the RF waveform is flat.

Waveform is not flat:

Adjust height of No. 4 and 5 guides as in 2-4-3. Outlet side adjustment.

Waveform is flat:

Rotate the guide lower toothed wheel counterclockwise by No. 6 guide lock jig (Ref. No. J-11) to loosen the toothed wheel. Rotate No. 6 guide counterclockwise 45° to tighten the lower toothed wheel. Recheck the RF waveform of the REV mode. (See Fig. 2-92.)

Note: Wrinkles may be caused in Part Ⓐ between the capstan spindle and No. 5 guide if No. 6 guide is raised excessively. Check that no wrinkles are caused. (See Fig. 2-93.)

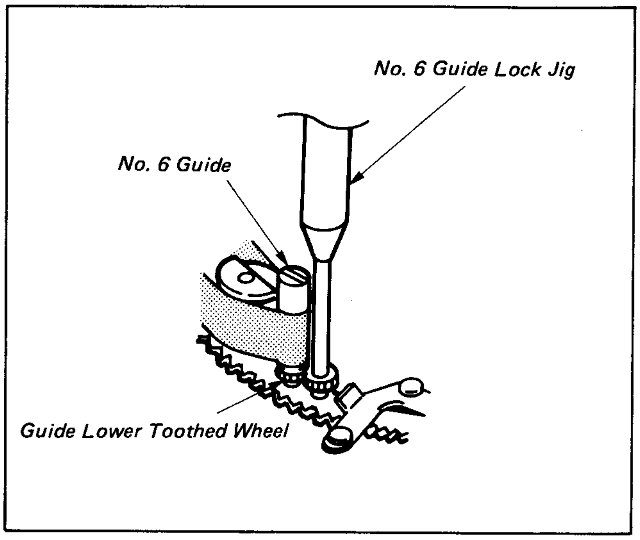

No. 6 Guide Lock Jig
No. 6 Guide
Guide Lower Toothed Wheel

Fig. 2-92

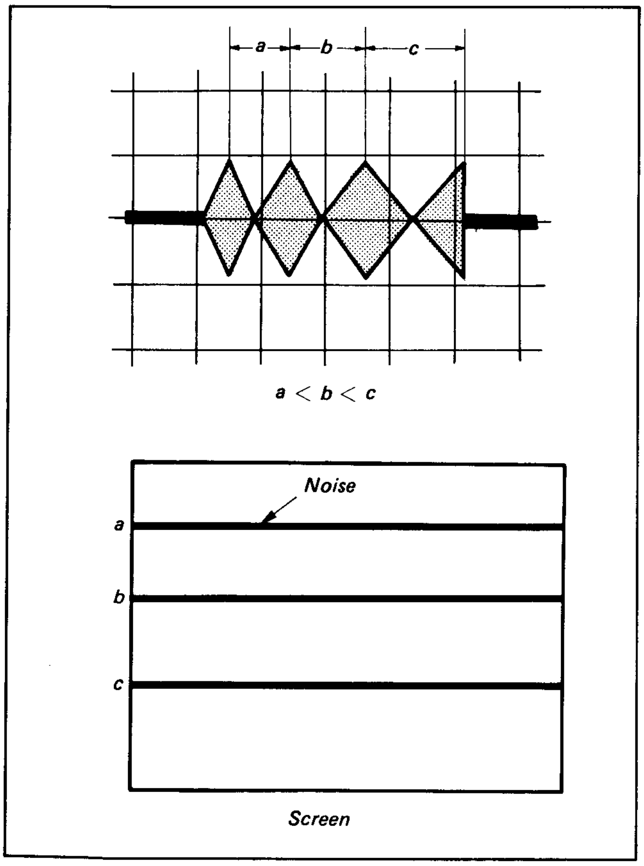

a
b
c
a < b < c
Noise
a
b
c
Screen

Fig. 2-91

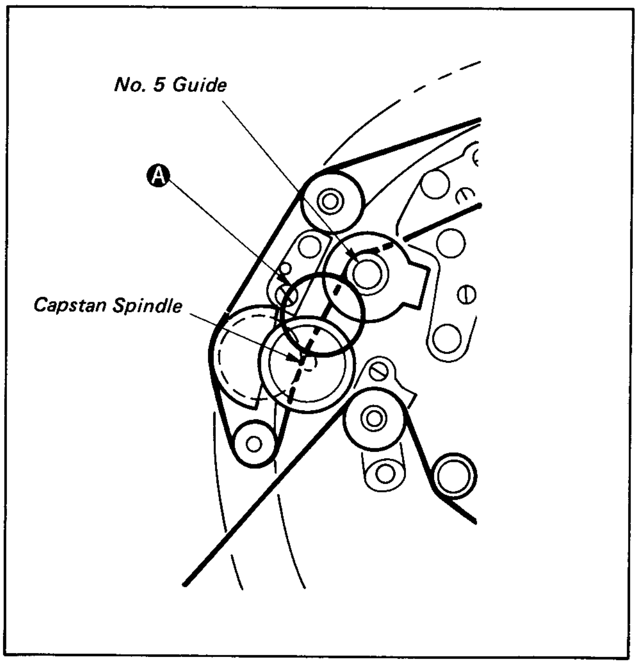

No. 5 Guide
Ⓐ
Capstan Spindle

Fig. 2-93

2. Checking rising edge

1) Check that the RF waveform rises horizontally during playing back after finishing loading, after CUE/REV, and during playing back after FF. If not, adjust as follows.

[Noise occurs on outlet side (lower screen) with rising during playing back after finishing loading] (See Fig. 2-94.)

Check that the FWD back tension is not too low.

If toolow:

Readjust as instructed in 2-4-21. FWD back tension adjustment.

If normal:

Rotate the azimuth screw of the pinch roller clockwise by 15° and adjust after rechecking the rising edge. (See Fig. 2-95.)

[Noise occurs on outlet side (lower screen) with rising during playing back after REV] (See Fig. 2-94.)

Loosen the guide lower toothed wheel of No. 6 guide using No. 6 guide lock jig, rotate No. 6 guide 90° counterclockwise to tighten the toothed wheel, then recheck the rising edge.

Note: Wrinkles may be caused in Part Ⓐ of Fig. 2-93 if No. 6 guide is raised excessively this time, between the capstan spindle and No. 5 guide, check that no wrinkles are caused.

[Noise occurs on outlet side (lower screen) with rising during playing back after FF] (See Fig. 2-94.)

Check that the FWD back tension is not too low.

If too low:

Readjust as required in 2-4-21. FWD back tension adjustment.

If normal:

Rotate the azimuth screw of the pinch roller clockwise by 15° and adjust after checking the rising edge. (See Fig. 2-95.)

Note: Be sure to check playback rising after finishing loading in case an adjustment is made.

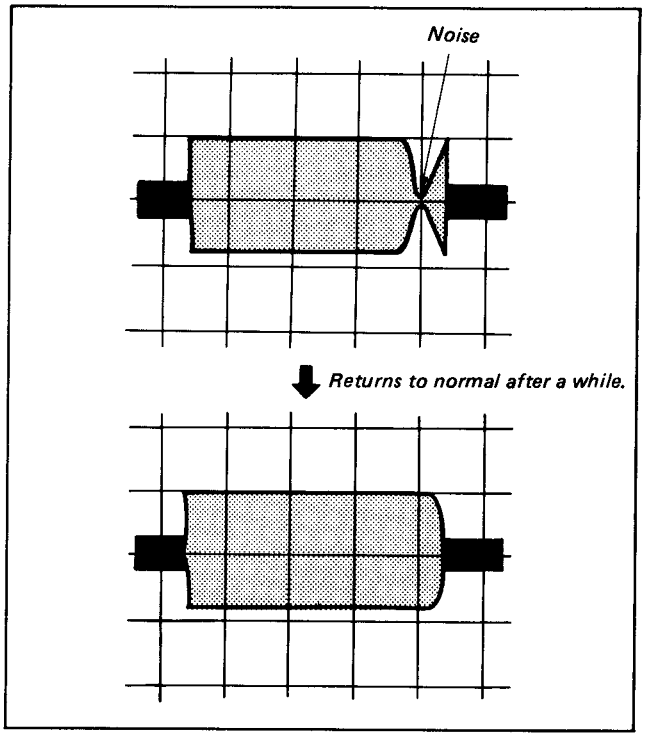

Noise
Returns to normal after a while.

Fig. 2-94

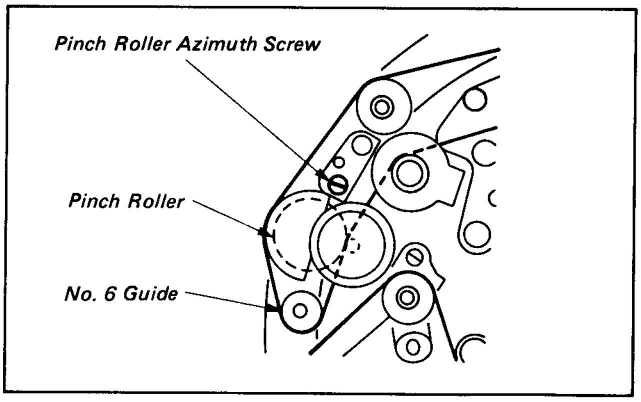

Pinch Roller Azimuth Screw
Pinch Roller
No. 6 Guide

Fig. 2-95

3. Tape run check

Check that the tape is not raised or curled at each guide flange of No. 1 to 6 (pointed by the arrows in Fig. 2-96) in PLAYBACK, CUE and REV modes.

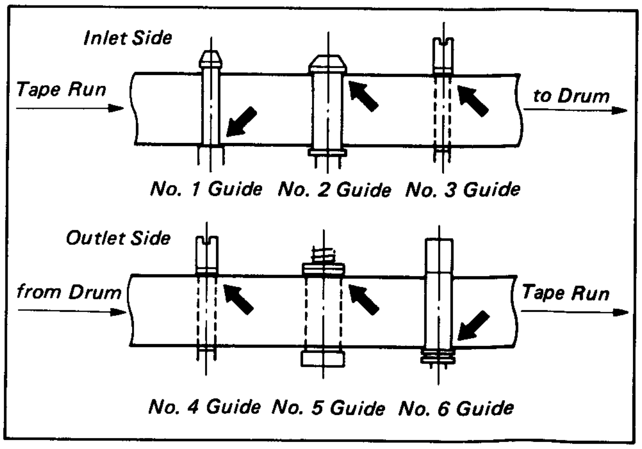

Inlet Side
Tape Run
to Drum
No. 1 Guide
No. 2 Guide
No. 3 Guide
Outlet Side
from Drum
Tape Run
No. 4 Guide
No. 5 Guide
No. 6 Guide

Fig. 2-96

3. VIDEO SECTION ADJUSTMENT

The following measuring instruments are needed in adjusting the video section.

[Equipment]

1) Monitor TV
2) AC adapter or T/T unit
3) Oscilloscope, 2 phenomena, band 10MHz or wider, with delay mode (Use a 10:1 probe unless otherwise specified)
4) Frequency counter
5) Pattern generator, with video output terminal
6) Digital voltmeter
7) Audio generator
8) Audio level meter
9) Audio distortion meter
10) Audio attenuator
11) Regulated power supply
12) Alignment tapes
    Tracking adjustment (WR5-1C)
    Parts code: 8-967-995-06
    Video frequency characteristic adjustment (WR5-2C)
    Parts code: 8-967-995-16
    Operation checking (WR5-3CL)
    Parts code: 8-967-995-36

[Equipment Connection]

Unless otherwise specified, adjustment is made by connecting the measuring instruments as shown below.

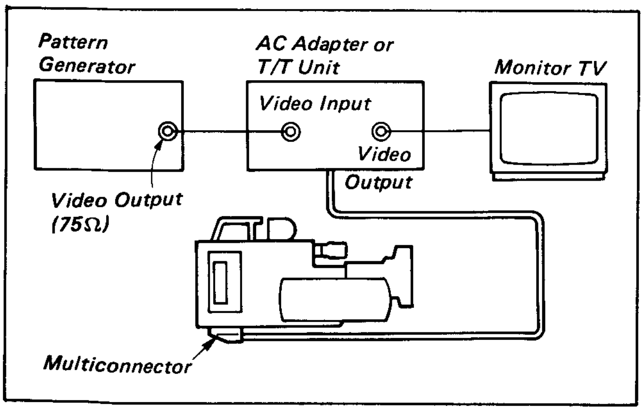

Pattern Generator
AC Adapter or T/T Unit
Monitor TV
Video Input
Video Output
Video Output (75Ω)
Multiconnector

Fig. 3-1

Setting up during adjustment

Video signals output by an pattern generator are used as adjustment signals when adjusting the video section, and these video output signals should be within the required standard. Connect an oscilloscope to TP121 (VIDEO IN) on the VI-7 Board. Check that the amplitudes of video signal SYNC signals, of picture portions, and of burst signals are flat at approximately 0.3, 0.7, and 0.3V, respectively, and that the level ratio of the burst signals and "red" signals are 0.30:0.66.

Fig. 3-2 shows video signals (colour bars) used in adjusting the video section.

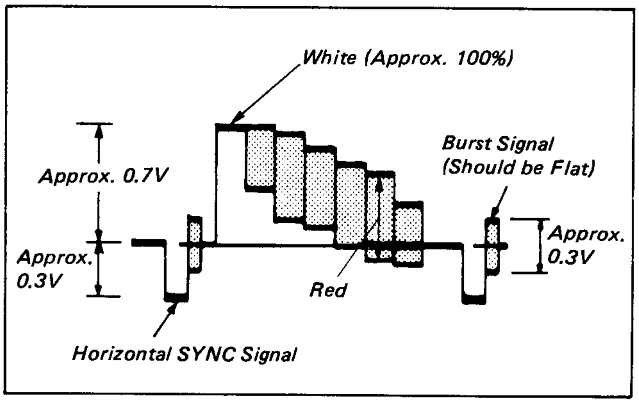
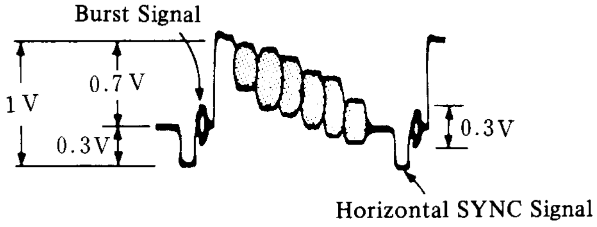
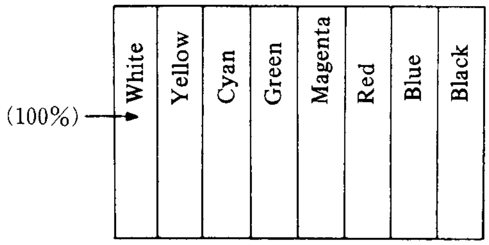

White (Approx. 100%)
Approx. 0.7V
Burst Signal (Should be Flat)
Approx. 0.3V
Approx. 0.3V
Red
Horizontal SYNC Signal

Fig. 3-2 Pattern Generator Color Bar Signals

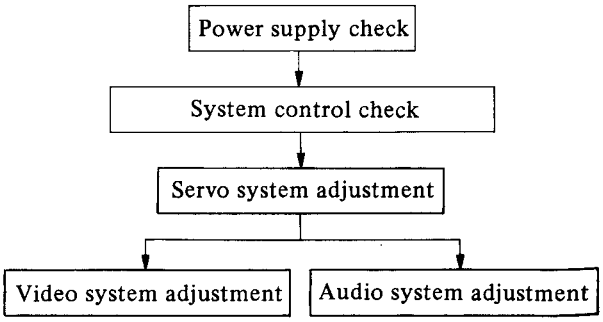
Tape	Content	Use	Tape Speed
Tracking (WR5-1C)	1. Recording area: PCM – video 2. Recording content: CH2: 1MHz linearity adjustment signal (CH1: 7MHz)	Drum linearity adjustment	SP
Video Frequency Characteristic (WR5-2C)	1. Recording area: Video 2. Recording content: RF sweep 0 to 10MHz 3. Marker: 1, 3.58, 5.5 and 7MHz 4. Recording level: $\frac{\text{5.5MHz level}}{\text{3.58MHz level}} = -5\text{dB}$	Frequency characteristic adjustment	LP
Operation Checking (WR5-3CL)	1. Recording area: Video 2. Recording content: ● Video signals Colour bars 10sec } Iterative Monoscope 8sec } (Colour bars)  Burst Signal 1V 0.7V 0.3V 0.3V Horizontal SYNC Signal  (100%) White Yellow Cyan Green Magenta Red Blue Black ● Audio signals 400Hz 60% modulation	Operation checking	LP

Input/output level and impedance to T/T unit or AC adapter

Video input pin jack
  Input signals: 1Vp-p, 75Ω unbalanced, sync negative
Video output pin jack
  Output signals: 1Vp-p, 75Ω unbalanced, sync negative
Audio input pin jack
  Input level: –6dBs (0dBs = 0.775Vrms)
  Input impedance: 47kΩ or higher
Audio output pin jack
  Regulated output: –6dBs
  Load impedance: 47kΩ or higher

Adjustment Procedure

Adjust in the following sequence:


Power supply check
System control check
Servo system adjustment
Video system adjustment
Audio system adjustment

3-1. POWER SUPPLY CHECK (VI-7 Board)

Mode: E-E
Digital voltmeter: + probe: Pin ③ of CN006
– probe: Pin ⑥ of CN006

[Checking Method]

Must be 5.0 ±0.15V dc.

3-2. SYSTEM CONTROL ADJUSTMENT

3-2-1. Battery Failure Adjustment (HS-5, SK-4 Board)

Cassette holder: A cassette tape should not be contained.
Multiconnector: Nothing shall be connected.
Regulated power supply and digital voltmeter: See Fig. 3-3.
Oscilloscope CH1: TP604 (SK-4 Board)
CH2: TP606 (SK-4 Board)

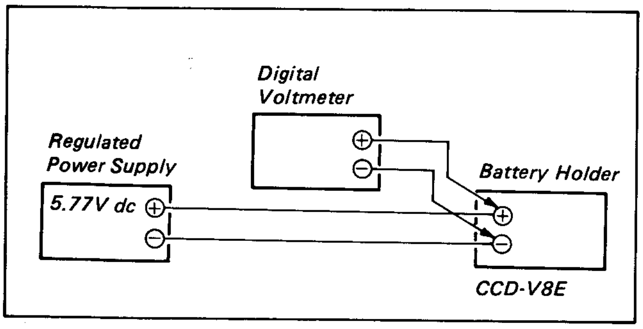


Fig. 3-3

[Adjustment Method]

1) Set the regulated power supply to 5.77V dc and turn on "VTR POWER".
2) Short TP603 and TP604 on the SK-4 Board by a jumper wire.
3) Rotate RV601 on the HS-5 Board and set to the position where a pulse is generated on CH2. (See Fig. 3-4.)
4) Rotate RV601 slowly in an opposite direction and stop it when the CH2 pulse disappears.
5) Disconnect the jumper wire.

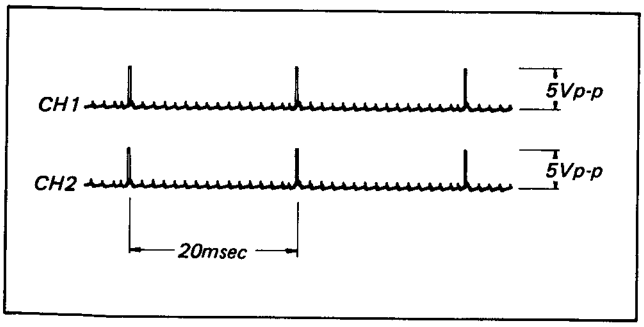


Fig. 3-4 Battery Failure Adjustment

3-2-2. Flying Erase Check (FE-4 Board)

Mode: RECORD
Oscilloscope: TP101

[Checking Method]

The oscillation frequency shall be 7MHz or more and level, 7.5Vp-p or more.

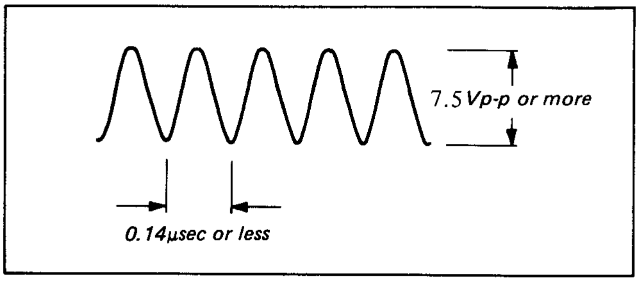


Fig. 3-5 Flying Erase Check

3-3. SERVO SYSTEM ADJUSTMENT

3-3-1. MOTOR POWER Voltage Adjustment (MC-8 Board)

Mode: E-E
Digital voltmeter: Pin ① of CN501

[Adjustment Method]

Adjust to 5.30 ±0.05V dc with RV601.

3-3-2. Capstan Free Speed Adjustment (SV-14 and AR-2 Boards)

Adjust in the sequence of SP mode and LP mode. Adjusting devices of LP mode are shown in [ ].

Mode: PLAYBACK
Tape: None recorded
Frequency counter: TP501 of SV-14 Board (CAP SP)
Connection 1: Connect TP104 (Pin ⑬ of IC101) and TP101 (REG GND) on the AR-2 Board using a 22μF/6.3V electrolytic capacitor. (TP104 is positive pole side)
Connection 2: Connect Pin ③ of CN512 (ATFLOCK) and Pin ④ of CN512 (GND) on the SV-14 Board using a jumper wire.

[Adjustment Method]

1) Set REC mode switch to SP mode [LP mode] and turn on VTR POWER.
2) Set up the PLAYBACK mode and adjust to 1341 ±1Hz [670 ±1Hz] using RV504 [RV503] on the SV-14 Board.

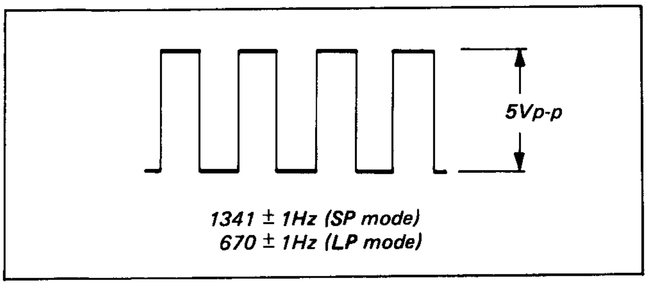


Fig. 3-6 Capstan Free Speed Adjustment

3-3-3. ATF Balance Adjustment (VI-7 and AR-2 Boards)

Mode: PLAYBACK
Alignment tape: Tracking adjustment (WR5-3CL)
Oscilloscope: CH1: AR-2 Board Pin ③ of CN112 (RF CH2)
CH2: AR-2 Board Pin ② of CN112 (RF SW PULSE)

[Adjustment Method]

Maximize the RF output level with RV110 on the VI-6 Board.

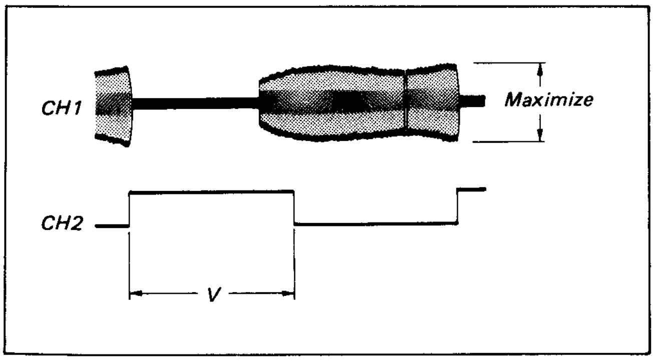


Fig. 3-7 ATF Balance Adjustment

3-3-4. Switching Position Adjustment (SV-14, VI-7 and AR-2 Boards)

Mode: PLAYBACK
Alignment tape: Operation checking (WR5-3CL)
Oscilloscope CH1: VI-7 Board TP108 (VIDEO OUT)
CH2: AR-2 Board Pin ② of CN112 (RF SW PULSE)

[Adjustment Method]

Adjust to 6.5 ±0.3H (416 ±20μsec) using RV502 on the SV-14 Board.

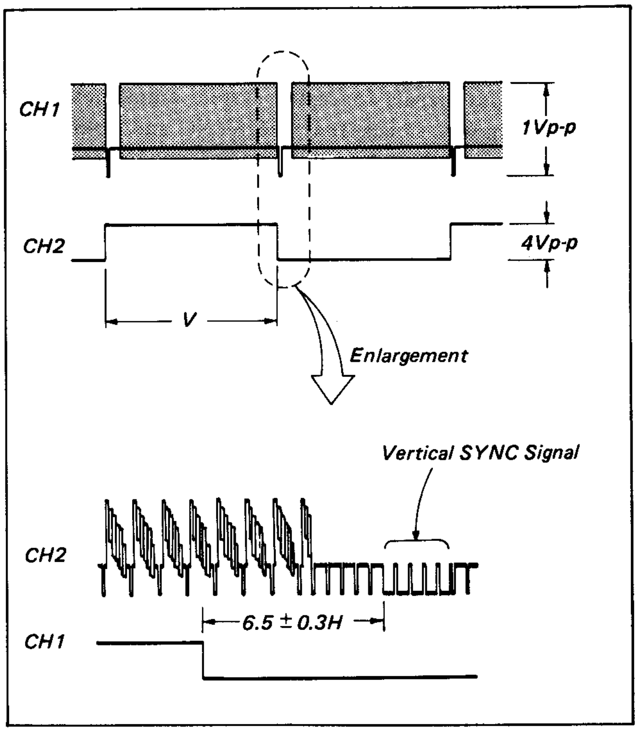


Fig. 3-8 Switching Position Adjustment

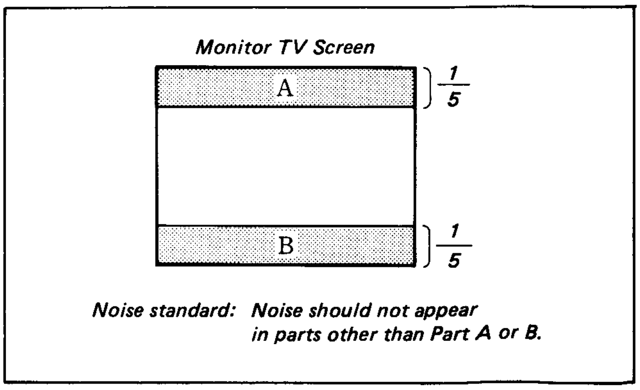
3-3-5. PB Pause Delay Time Adjustment (SV-14 Board)

Mode: PLAYBACK → PLAYBACK PAUSE, (LP)
Tape: Self-recording and PLAYBACK in LP mode

[Adjustment Method]

Adjust while watching the monitor TV.

1) Set up the PLAYBACK mode and press the PAUSE button when playback pictures stabilize to set up the PLAYBACK PAUSE mode.
2) Check that noise is not shown on the TV screen in the PLAYBACK PAUSE mode. (See Fig. 3-9.)
3) Rotate RV501 and repeat Steps 1) and 2) if noise appears.



Noise standard: Noise should not appear in parts other than Part A or B.

Fig. 3-9 PLAYBACK PAUSE Delay Time Adjustment

3-4. VIDEO SYSTEM ADJUSTMENT

In principle, adjust the video system in the following procedure.

Colour video signals fed by a pattern generator are utilized as video input signals for video system adjustment in the RECORD mode. Check that the SYNC and colour burst signals match the standard designated in adjustment setting up shown in Fig. 3-2.

[Adjustment Procedure]

1) Playback frequency characteristic adjustment
2) PB Y trap adjustment
3) X'tal oscillator fo adjustment
4) 375 fH VCO adjustment
5) Y comb AGC adjustment
6) C comb AGC adjustment
7) SYNC AGC adjustment
8) VIDEO OUT level adjustment
9) PB Y level adjustment
10) Y FM carrier frequency adjustment
11) Y FM deviation adjustment
12 AC clip adjustment
13) Carrier balance adjustment
14) Chroma emphasis fo adjustment
15) REC C RF Trap adjustment
16) fH VCO adjustment
17) GCA GAIN adjustment
18) REC Y recording current adjustment
19) REC C recording current adjustment
20) REC ATF recording current adjustment

3-4-1. Playback Frequency Characteristic Adjustment (AR-2 Board)

CH2 adjusting devices are shown in [ ].
Moed: PLAYBACK
Alignment tape: Frequency characteristic adjustment (WR5-2C)
Oscilloscope CH1: Pin④ of CN112 [Pin③ of CN112]
External trigger: Pin② of CN112 [Pin② of CN112]
Trigger slope: +, [−]

[Adjustment Method]

Adjust the ratio between the 3.58 and 5.5MHz levels to 4:3 using RV102 [RV106].

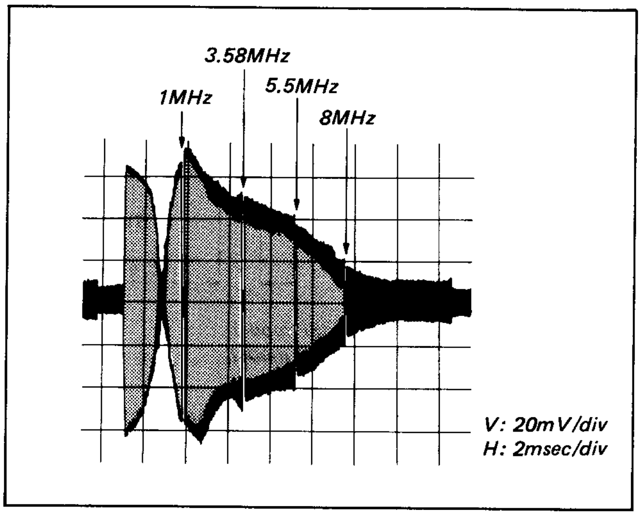


Fig. 3-10 Playback Frequency Characteristic Adjustment

3-4-2. PB Y Trap Adjustment (AR-2 Board)

Mode: Self-recording and PLAYBACK
Input signals: Colour bar

[Adjustment Method]

1) Record.
2) Play back recorded portions.
3) Rotate LV101 while watching the monitor TV screen and stop rotating when the beat is minimum.

3-4-3. X'tal Oscillator fo Adjustment (VI-7 Board)

Mode: PLAYBACK
Alignment tape: For operation checking (WR5-3CL)
Frequency counter: Pin③ of CN110

Note: Connect the frequency counter through a buffer with high impedance (approx. 10MΩ) and low capacity (less than 10pF).

[Adjustment Method]

Adjust to 4.433619 ±50Hz with CV101.

3-4-4. 375fH VCO Adjustment (VI-7 Board)

Mode: E-E
Input signals: Colour bar
Digital voltmeter: Pin ㉖ of IC104

[Adjusting Method]

Adjust to 3.00 ±0.05V dc with RV111.

3-4-5. Y Comb AGC Adjustment (VI-7 Board)

Mode: E-E
Input signals: Colour bar
Oscilloscope: Pin ⑨ of IC102

Connect a 22kΩ resistor serially between Pin ⑨ of IC102 and 10:1 probe.

[Adjustment Method]

Adjust to 50 ± 25mVp-p with RV108.

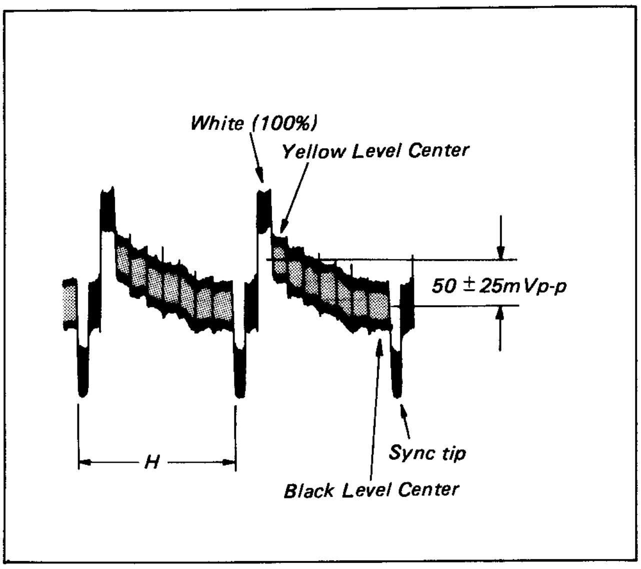

White (100%)
Yellow Level Center
50 ± 25m Vp-p
H
Sync tip
Black Level Center

Fig. 3-11 Y Comb AGC

3-4-6. C Comb AGC Adjustment (VI-7 Board)

Mode: E-E
Input signals: Colour bar
Oscilloscope: Pin ㉖ of IC102 or Pin ③ of CN014 on the EX-1 board.
Connection: Connect Q113 base to REG GND.

[Adjustment Method]

Adjust RV107 and LV103 alternately to minimize residual chroma components.

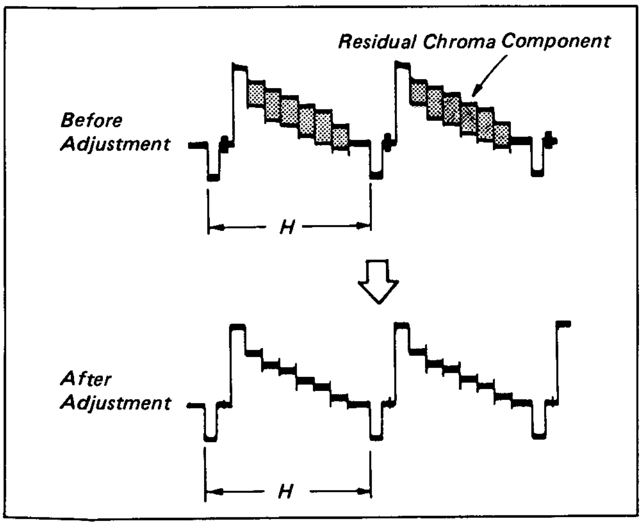

Residual Chroma Component
Before Adjustment
H
After Adjustment
H

Fig. 3-12 C Comb AGC Adjustment

3-4-7. SYNC AGC Adjustment (VI-7 Board)

Mode: E-E
Input signals: Colour bar
Oscilloscope: Pin ㊲ of IC101 or Pin ⑦ of CN014 on the EX-1 Board

[Adjustment Method]

Adjust to 0.5 ±0.01Vp-p with RV102.

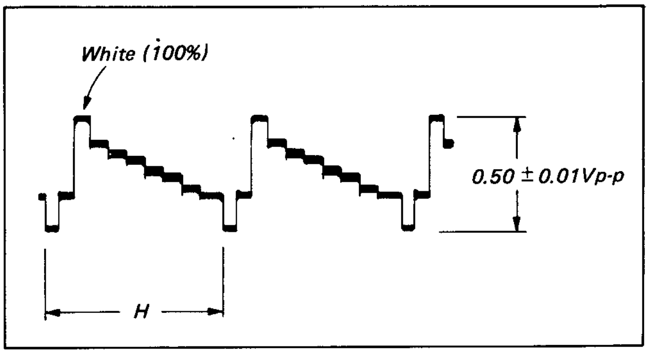

White (100%)
0.50 ± 0.01Vp-p
H

Fig. 3-13 SYNC AGC Adjustment

3-4-8. VIDEO OUT Level Adjustment (VI-7 Board)

Mode: E-E
Input signals: Colour bar
Oscilloscope: TP108 (VIDEO OUT)
An AC adapter or T/T unit must be connected to the multiconnector.

[Adjustment Method]

Adjust to $1.00^{+0.025}_{-0.05}$ Vp-p with RV101.

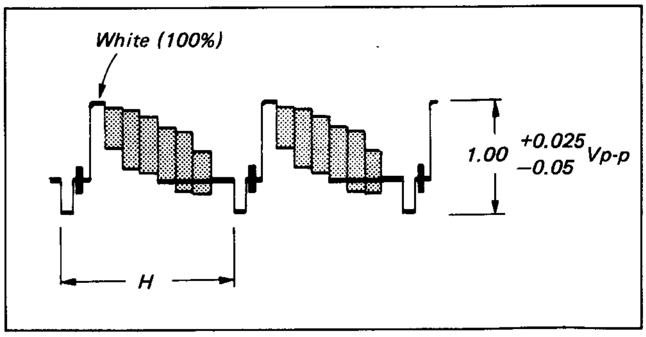

White (100%)
1.00 +0.025 −0.05 Vp-p
H

Fig. 3-14 VIDEO OUT Level Adjustment

3-4-9. PB Y Level Adjustment (VI-7 Board)

Mode: PLAYBACK

Alignment tape: For operation checking, (WR5-3CL) colour bar portion

Oscilloscope: TP108 (VIDEO OUT)
An AC adapter or T/T unit must be connected to the multiconnector.

[Adjustment Method]

Adjust to 1.00 ±0.05Vp-p with RV106.

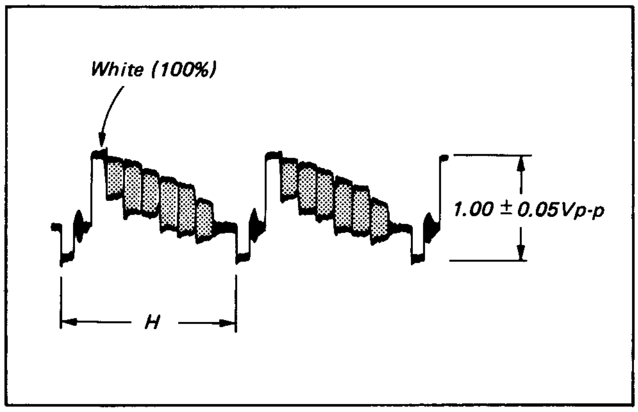


Fig. 3-15 PB Y Level Adjustment

3-4-10. Y FM Carrier Frequency Adjustment (VI-7 Board)

Mode: E-E

Input signal: None

Frequency counter: Pin ⑥ of CN009 (REC Y RF)

Digital voltmeter: The center of RV104 (AC clip) or Pin ㉚ of IC101

[Adjustment Method]

1) Minimize the voltage (approx. 2.4V dc) of Pin ㉚ of IC101 with RV104.
2) Adjust to 4.20 ±0.04MHz with RV103 (Carrier).
3) Perform steps required in 3-4-12. AC Clip Adjustment.

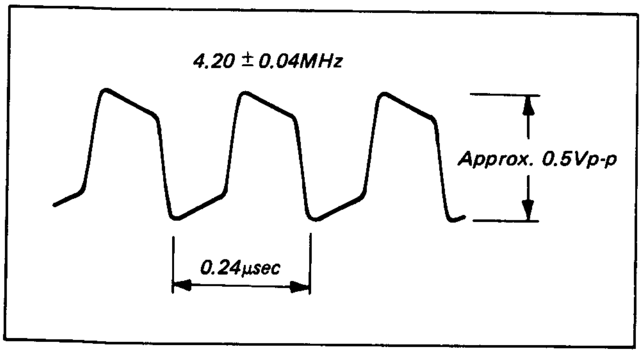


Fig. 3-16 Y FM Carrier Frequency Adjustment

3-4-11. Y FM Deviation Adjustment (VI-7 Board)

Adjustments of VIDEO OUT level, PB Y level, and Y FM carrier frequency must be finished.

Mode: Self-recording and PLAYBACK

Input signals: Colour bar

Oscilloscope: TP108 (VIDEO OUT)
An AC adapter or T/T unit must be connected to the multiconnector.

[Adjustment Method]

1) Record colour bar signals.
2) Play back recorded portions.
3) Check the playback output level.
Standard: 1.00 ±0.05Vp-p
4) Rotate RV105 as follows and repeat Steps 1) through 3) when the value does not satisfy the standard.

	RV105 rotation direction seen from component side
Larger than standard value	Clockwise (↷)
Smaller than standard value	Counterclockwise (↶)

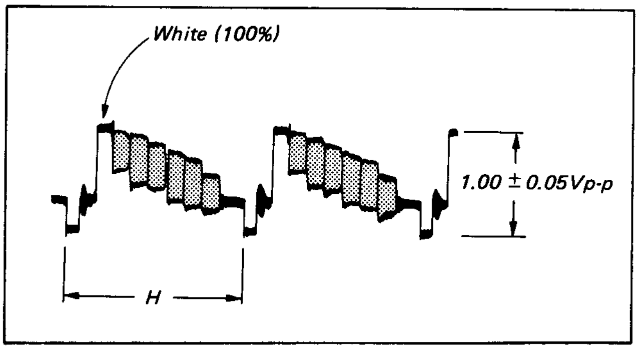


Fig. 3-17 Y FM Deviation Adjustment

3-4-12. AC Clip Adjustment (VI-7 Board)

Mode: E-E

Input signals: Colour bar

Oscilloscope: Pin ㉔ of IC101

[Adjustment Method]

Adjust the peak of white (100%) portion to 250 ±10% with RV104.

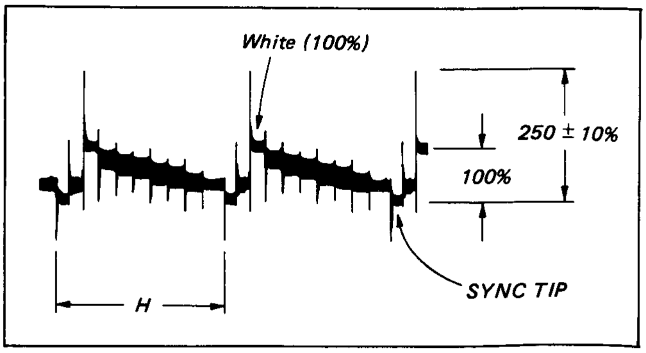


Fig. 3-18 AC Clip Adjustment

3-4-13. Carrier Balance Adjustment (VI-7 Board)

Mode: E-E
Input signals: Colour bar
Oscilloscope: Pin ㊵ of IC104

[Adjustment Method]

Minimize the 5.17MHz component with RV109.

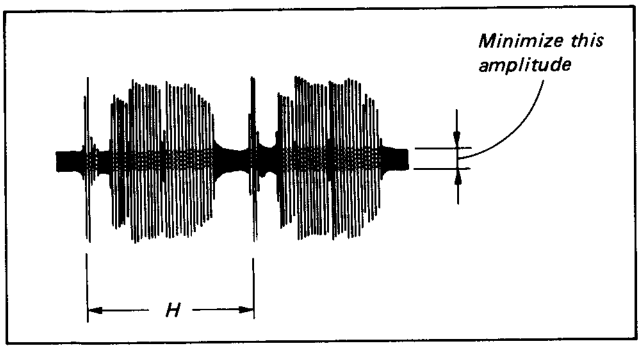


Fig. 3-19 Carrier Balance Adjustment

3-4-14. Chroma Emphasis fo Adjustment (VI-7 Board)

Mode: E-E
Input signals: Colour bar
Oscilloscope: Pin ⑧ of IC103

[Adjustment Method]

Minimize the amplitude of the flat portions of chroma signals with FL102.

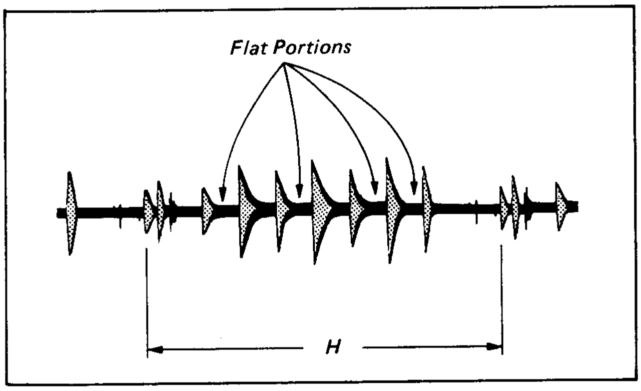


Fig. 3-20 Chroma Emphasis fo Adjustment

3-4-15. REC C RF Trap Adjustment (VI-7 and AR-2 Boards)

Mode: E-E
Input signals: None
Oscilloscope: Pin ② of CN009 on the VI-7 board
Frequency counter: Pin ⑬ of IC401 on the AR-2 board
Connection: Connect Pin ㊵ of IC104 on the VI-7 board and Pin ⑭ of IC401 on the AR-2 board using a 0.01μF capacitor.

[Adjustment Method]

1) Adjust RV402 on the AR-2 board so that the AFM Carrier Frequency is 1.41 ±0.01MHz.
2) Minimize the residual 1.41MHz component of Pin ② of CN009 with LV102 on the VI-7 board.
3) Adjust RV402 on the AR-2 board so that the AFM Carrier Frequency is 1.500 ±0.002MHz.

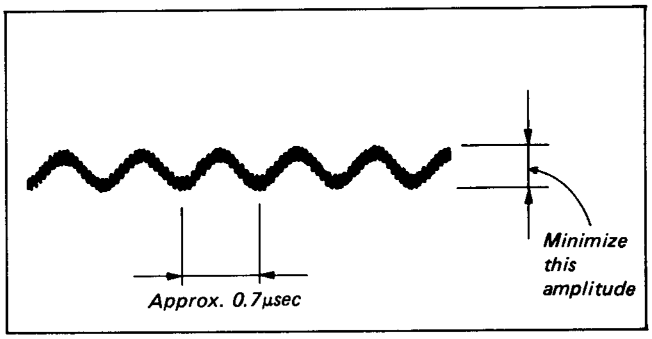


Fig. 3-21 REC C RF Trap Adjustment

3-4-16. fH VCO Adjustment (VI-7 Board)

Mode: E-E
Input signals: Colour bar
Oscilloscope: CH1: Pin ⑬ of IC108
CH2: TP121 (VIDEO IN)

[Adjustment Method]

1) Adjust RV112 so that the T_R of CH1 is 16.0 ±0.5μsec.
2) Confirm that the H (time) of CH1 and CH2 is stable.

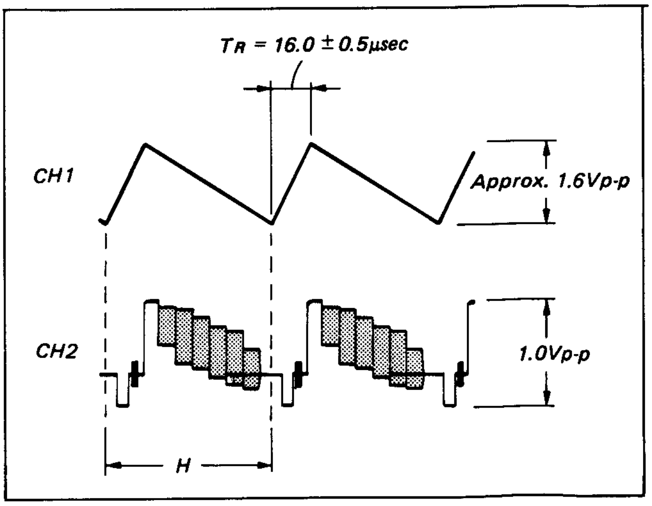


Fig. 3-22 f_H VCO Adjustment

3-4-17. GCA GAIN Adjustment (VI-7 Board)

Mode: PLAYBACK PAUSE
Alignment tape: For operation checking (WR5-3CL) colour bar portion
Oscilloscope: TP108 (VIDEO OUT)

[Adjustment Method]

Adjust RV113 so that the burst signal is 290mVp-p.

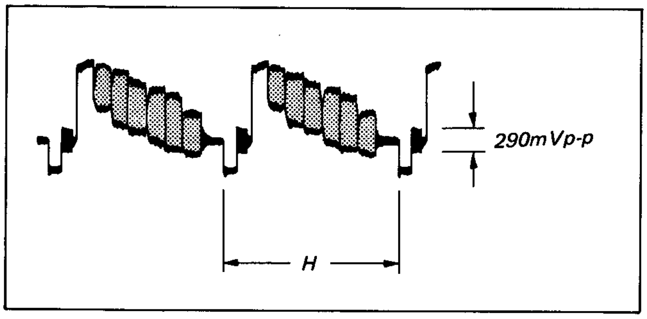


Fig. 3-23 GCA GAIN Adjustment

3-4-18. REC Y Recording Current Adjustment (AR-2 Board)

Mode: RECORD
Tape: MP type (Pin ③ of CN009 shall be approx. 5V dc.)
Input signals: Colour bar
Oscilloscope: TP102
Connection: Connect the following three places with jumper wires.
Pin ② of CN009 (REC C RF) – REG GND
Pin ⑥ of CN008 (REC ATF RF) – REG GND
Terminal of RV104 (REC AFM ADJ) on the R125 side – REG GND

[Adjustment Method]

Adjust to 160mVp-p with RV101.

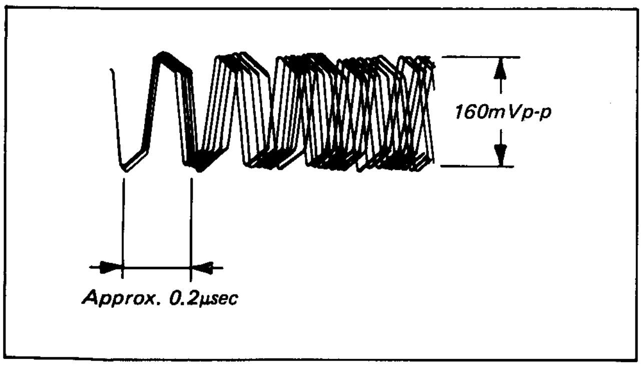


Fig. 3-24 REC Y Recording Current Adjustment

3-4-19. REC C Recording Current Adjustment (AR-2 Board)

Mode: RECORD
Tape: MP type (Pin ③ of CN009 shall be approx. 5V dc.)
Input signal: Colour bar
Oscilloscope: TP102 Do not use a 10:1 probe if the signal level is too small and is difficult to read. Connect directly using a 100Ω resistor as shown below.

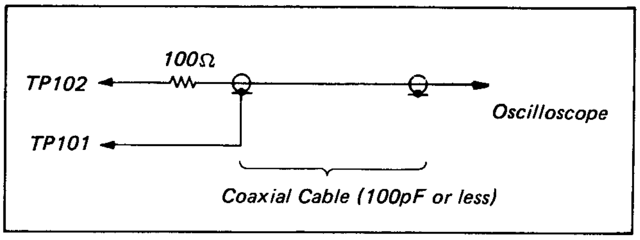


Fig. 3-25

Connection: Connect the following three locations using jumper wires.
Pin ⑥ of CN009 (REC Y RF) – REG GND
Pin ⑥ of CN008 (REC ATF RF) – REG GND
Terminal of RV104 (REC AFM ADJ) on the R125 side – REG GND

[Adjustment Method]

1) Rotate RV104 (REC AFM ADJ) to maximize the chroma signal level.
2) Adjust the red level to 30mVp-p with RV105 (REC C ADJ).
3) Make REC ATF and AFM recording current adjustments as required in 3-4-20 and 3-5-3, respectively.

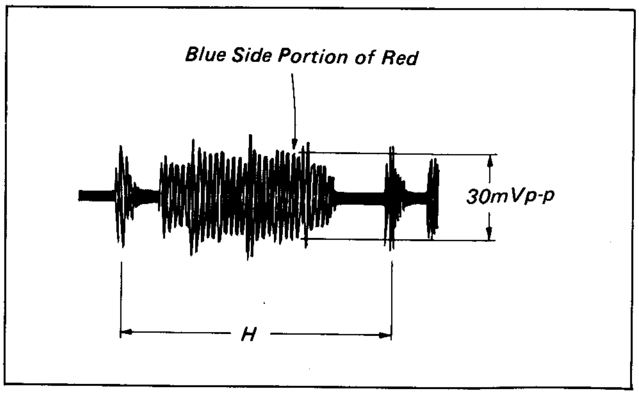


Fig. 3-26 REC C Recording Current Adjustment

3-4-20. REC ATF Recording Current Adjustment (AR-2 Board)

Mode: RECORD
Tape: MP type (Pin ③ of CN009 shall be approx. 5V dc.)
Input signals: Colour bar
Oscilloscope: TP102 Do not use a 10:1 probe if the signal level is too small and is difficult to read. Connect directly using a 100Ω resistor as shown below.

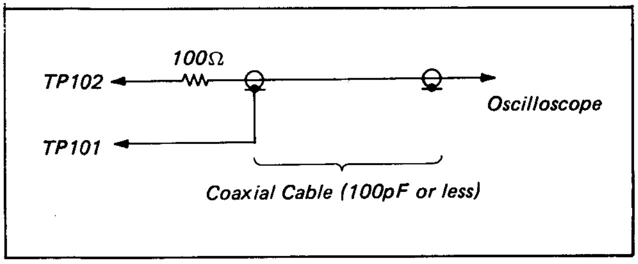

100Ω
TP102
TP101
Oscilloscope
Coaxial Cable (100pF or less)

Fig. 3-27

Connection: Connect the following three locations using jumper wires.
Pin ⑥ of CN009 (REC Y RF) – REG GND
Pin ② of CN009 (REC C RF) – REG GND
Terminal of RV104 (REC AFM ADJ) on R125 side – REG GND

[Adjustment Method]

1) Adjust RV104 (REC AFM ADJ) to the mechanical center.
2) Adjust to 6.0mVp-p with RV103 (REC ATF ADJ).
3) Perform steps mentioned in 3-5-3. AMF Recording Current Adjustment.

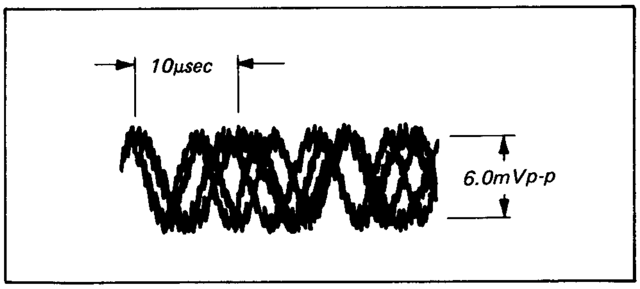


Fig. 3-28 REC ATF Recording Current Adjustment

3-5. AUDIO SYSTEM ADJUSTMENT

Connection of audio measuring instruments

Connect audio-system measuring instruments as shown below in addition to video system measuring instruments.

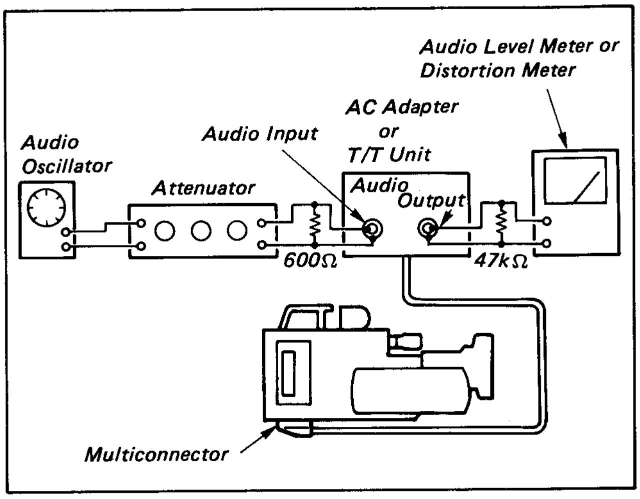

Audio Level Meter or Distortion Meter
AC Adapter or T/T Unit
Audio Oscillator
Audio Input
Attenuator
Audio Output
600Ω
47kΩ
Multiconnector

Fig. 3-29

[Adjustment Procedure]

1) AFM carrier frequency adjustment
2) AFM deviation adjustment
3) AFM recording current adjustment
4) E-E output level check
5) Overall level characteristic check
6) Overall distortion factor check
7) Overall noise level check

3-5-1. AFM Carrier Frequency Adjustment (AR-2 Board)

Mode: RECORD
Audio input signals: None
Frequency counter: Pin ⑬ of IC401

[Adjustment Method]

Adjust to 1.500 ±0.002MHz with RV402.

3-5-2. AFM Deviation Adjustment (AR-2 Board)

Mode: PLAYBACK
Playback tape: For operation checking (WR5-3CL)

[Adjustment Method]

Adjust the audio output level to –6.5 ±0.2dBs with RV401.

3-5-3. AFM Recording Current Adjustment (AR-2 Board)

Mode: RECORD
Tape: MP type (Pin ③ of CN009 shall be approx. 5V dc.)
Audio input signals: None
Oscilloscope: TP102 Do not use a 10:1 probe if the signal level is too small and is difficult to read. Connect directly using a 100Ω resistor as shown below.

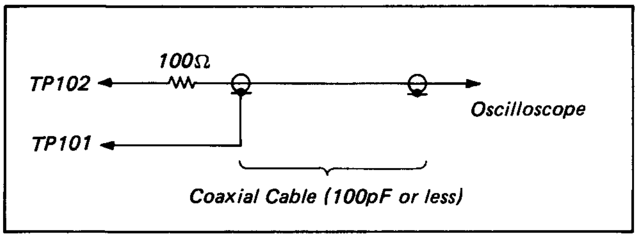


Fig. 3-30

Connection: Connect the following three locations using jumper wires.

Pin ⑥ of CN009 (REC Y RF) – REG GND
Pin ② of CN009 (REC C RF) – REG GND
Pin ⑥ of CN008 (REC ATF RF) – REG GND

[Adjustment Method]

Adjust to 7.0mVp-p with RV104.

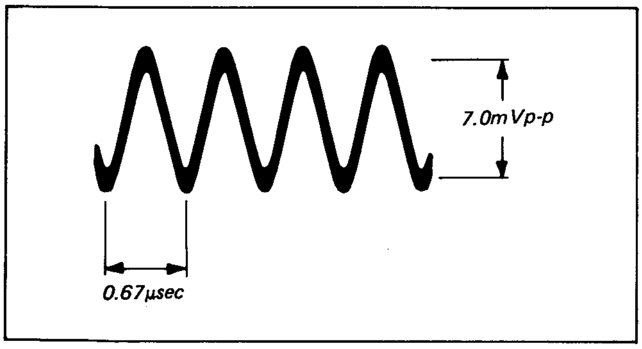


Fig. 3-31 AFM Recording Current Adjustment

3-5-4. E-E Output Level Check

Mode: E-E or RECORD
Audio input signals: 400Hz, −6dBs

[Checking Method]

The audio output level must be −6 ±2dBs.

3-5-5. Overall Level Characteristic Check

Mode: Self-recording and PLAYBACK (LP)
Tape: MP type
Audio input signals: 400Hz, −6dBs

[Checking Method]

1) Record.
2) Play back recorded portions.
3) The audio output level must be −6 ±3dBs.

3-5-6. Overall distortion Check

Mode: Self-recording and PLAYBACK (LP)
Tape: MP type
Audio input signals: 400Hz, −6dBs

[Checking Method]

1) Record.
2) Play back recorded portions.
3) The distortion must be less than 1.0%.

3-5-7. Overall Noise Level Check

Mode: Self-recording and PLAYBACK (LP)
Tape: MP type
Audio input signals: None (Short audio input terminal)

[Checking Method]

1) Record.
2) Play back recorded portions.
3) The noise level must be less than −66dBs.

4. ELECTRONIC VIEW FINDER ADJUSTMENT

4-1. HORIZONTAL SLANT ADJUSTMENT

Alignment tape: For operation checking (WR5-3CL)

[Adjustment Method]

1) Play back the monoscope portions of the alignment tape.
2) Rotate the deflection coil while moving it closer to the fluorescent screen and fix the deflection coil so that pictures become horizontal.
   (Do not strap too strongly.)

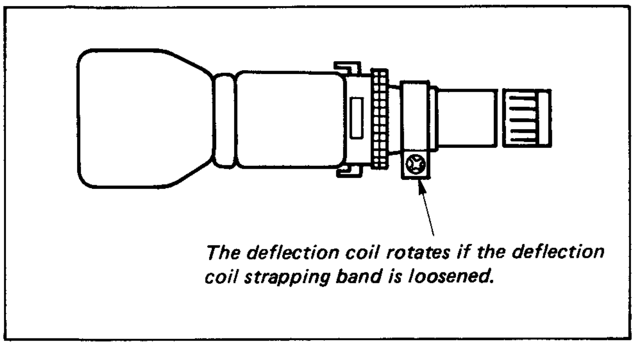
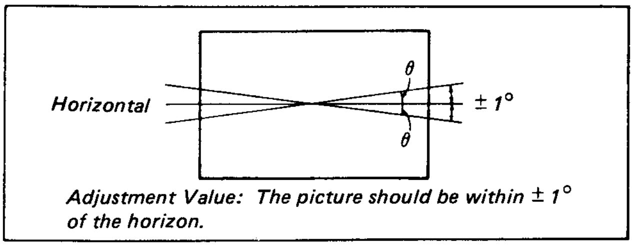

The deflection coil rotates if the deflection coil strapping band is loosened.

Fig. 4-1



Adjustment Value: The picture should be within ± 1° of the horizon.

Fig. 4-2

4-2. CENTERING ADJUSTMENT

Alignment tape: For operation checking (WR5-3CL)

[Adjustment Method]

1) Play back monoscope portions of the alignment tape.
2) Move the centering magnet to adjust to obtain pictures that are uniform horizontally and vertically.

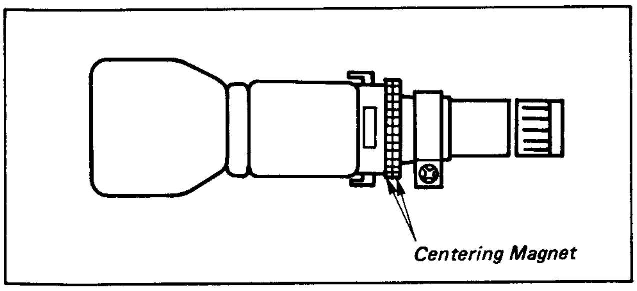
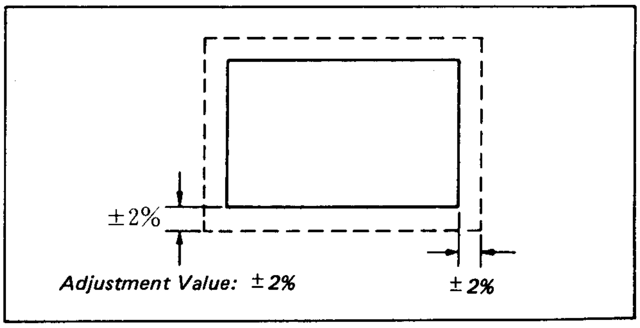


Fig. 4-3



Adjustment Value: ±2%

Fig. 4-4

Note: The centering position changes affected by ground magnetism. Rotate 360° horizontally and adjust by the displacement center portion.

4-3. HORIZONTAL AMPLITUDE ADJUSTMENT (VF-4 Board)

Alignment tape: For operation checking (WR5-3CL)

[Adjustment Method]

1) Play back the monoscope portions of the alignmentt tape.
2) Rotate RV003 and align the top and bottom portions of the monoscope picture to the top and bottom edges of the screen.
3) Rotate RV005 to obtain the normal level of brightness.
4) Short or open the patterns (A to C) of the H-size adjusting capacitors (C028 to C030) sequentially to obtain horizontal overscanning of 8 ±2.5% (total of both left and right). (See Fig. 4-6.)

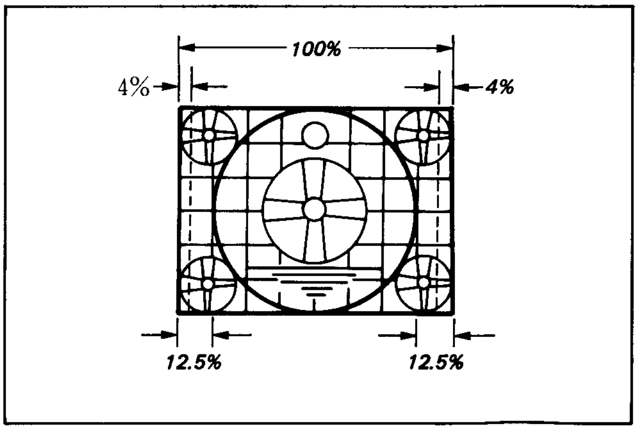


Fig. 4-5

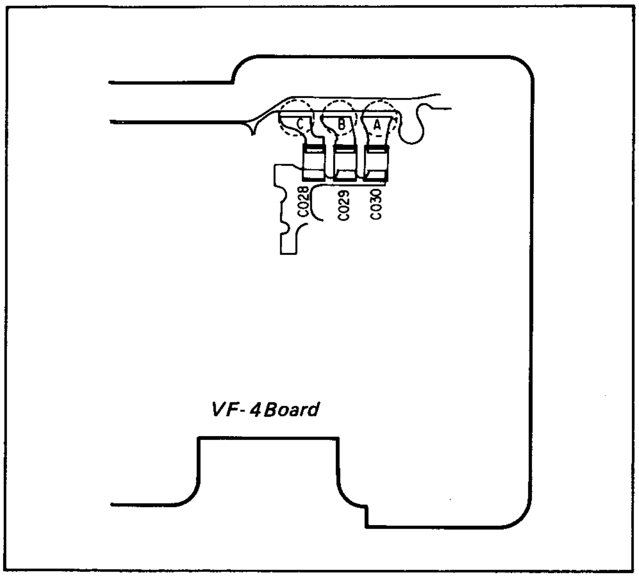


Fig. 4-6

4-4. VERTICAL AMPLITUDE ADJUSTMENT (VF-4 Board)

Alignment tape: For operation checking (WR5-3CL)

[Adjustment Method]

1) Play back the monoscope portions of the alignment tape.
2) Adjust RV003 to obtain vertical overscanning of 5 ±2.5% (total of both top and bottom).

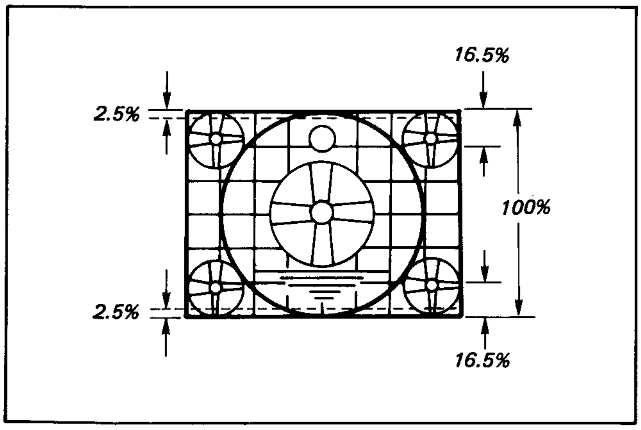


Fig. 4-7

4-5. HORIZONTAL OSCILLATING FREQUENCY ADJUSTMENT (VF-4 Board)

Preparation: Connect between Pin ⑨ of IC001 and GND using a jumper wire. Cover a white cap on the camera lens.

[Adjustment Method]

1) Turn on camera power.
2) Adjust RV001 to obtain pictures as shown in Fig. 4-8. (Flow of horizontal blanking portion (black lines) should be less than two lines.)

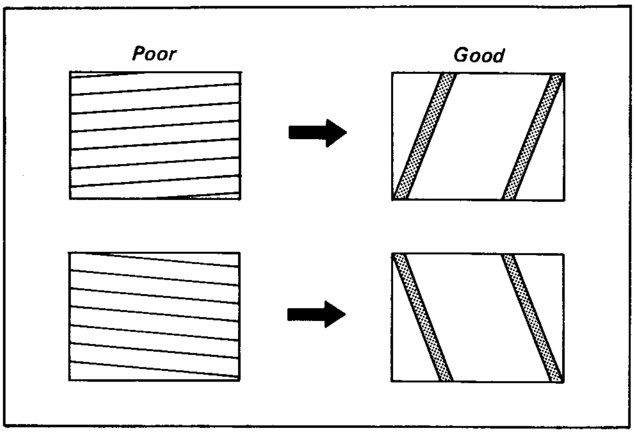


Fig. 4-8

4-6. VERTICAL OSCILLATING FREQUENCY ADJUSTMENT (VF-4 Board)

Preparation: Connect between Pin ⑨ of IC001 and GND using a jumper wire.

Equipment: A frequency counter or an oscilloscope

[Adjustment Method]

1) Connect the frequency counter or oscilloscope to the – side (DV1 terminal) of C015.
2) Adjust the frequency to 42 ±1Hz (23.8 ±0.6msec) with RV002.

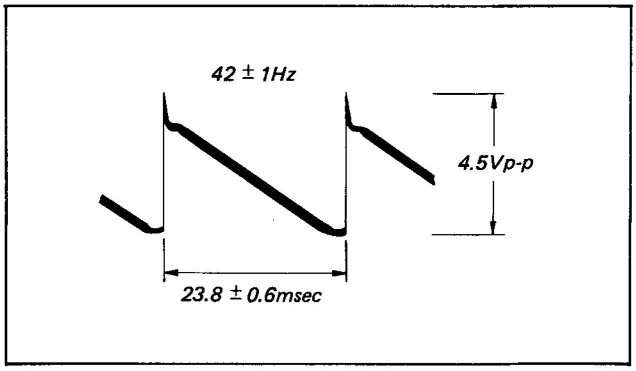


Fig. 4-9

4-7. BRIGHTNESS AND CONTRAST ADJUSTMENT (VF-4 board)

Alignment tape: For operation checking (WR5-3CL)

[Adjustment Method]

1) Play back the monoscope portions of the alignment tape.
2) Adjust RV004 and RV005 alternately until light and shade of the gray scale is indicated correctly. (The light portion should not be so bright that the cross hatch inside the monoscope circle blooms. The shade portion should not be so dark that the darkest and second darkest portions of the gray scale cannot be recognized.)

4-8. FOCUS ADJUSTMENT (VF-4 Board)

Alignment tape: For operation checking (WR5-3CL)

[Adjustment Method]

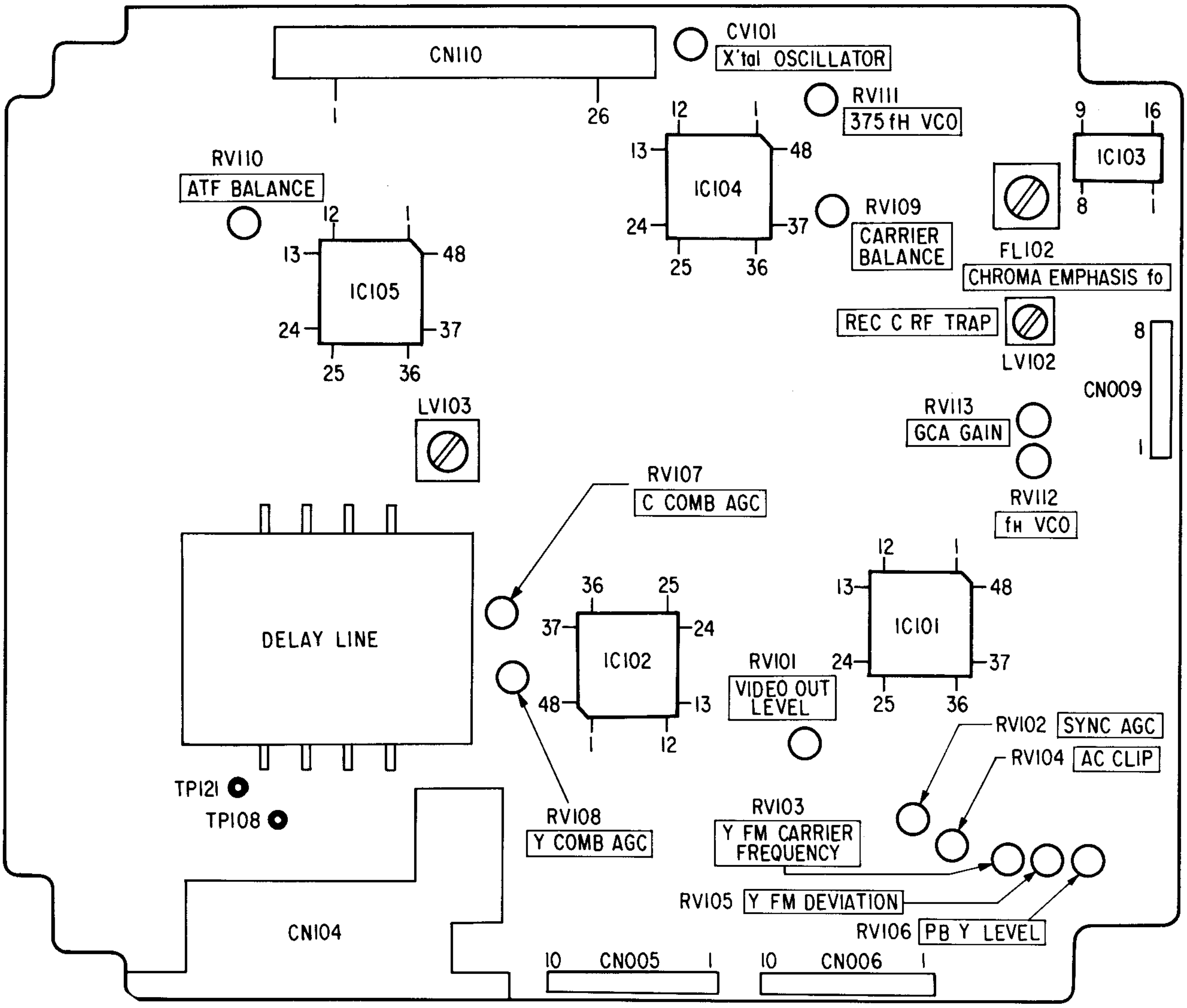
1) Play back the monoscope portions of the alignment tape.
2) Adjust to the best focus point with RV006.

4-9. HORIZONTAL AND VERTICAL AMPLITUDE CHECKING

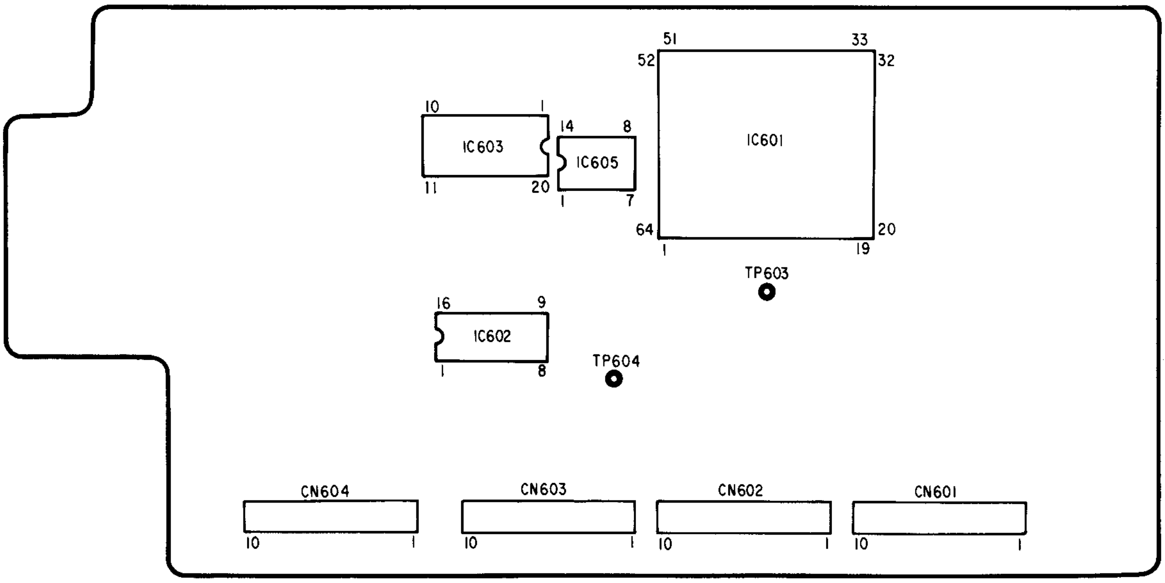
The parameters given in 4-3. Horizontal Amplitude Adjustment and 4-4. Vertical Amplitude Adjustment must be within the standard values. If not, readjust. Perform the steps required in 4-7 Brightness and Contrast Adjustment and 4-8 Focus Adjustment as well when making horizontal and vertical amplitude adjustment.

5. RV AND TP LOCATION

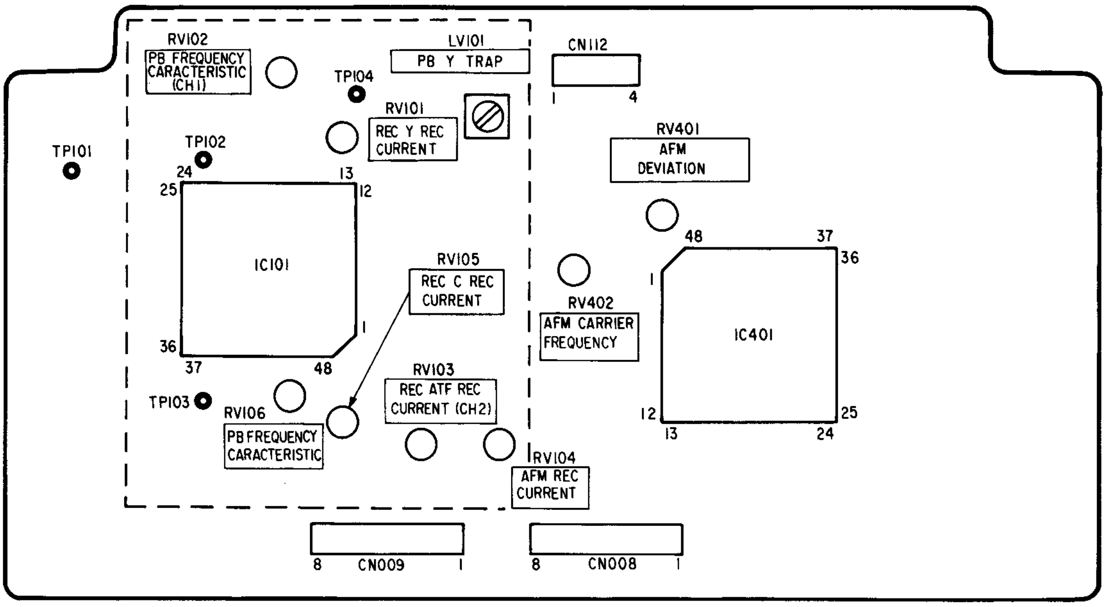
VI-7 Board (Component Side)


CN110
1
26
CV101
X'tal OSCILLATOR
RV111
375fH VCO
IC104
RV109
CARRIER BALANCE
IC103
FL102
CHROMA EMPHASIS fo
RV110
ATF BALANCE
IC105
REC C RF TRAP
LV102
CN009
LV103
RV113
GCA GAIN
RV112
fH VCO
RV107
C COMB AGC
DELAY LINE
IC102
IC101
RV101
VIDEO OUT LEVEL
RV102
SYNC AGC
RV104
AC CLIP
TP121
TP108
RV108
Y COMB AGC
RV103
Y FM CARRIER FREQUENCY
RV105
Y FM DEVIATION
RV106
PB Y LEVEL
CN104
CN005
CN006

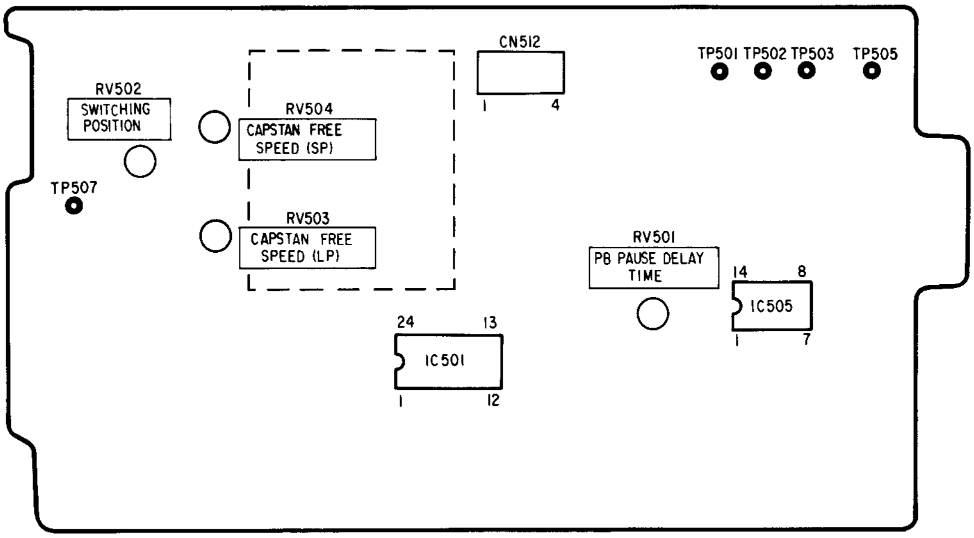
SK-4 Board (Solder Side)


IC601
IC603
IC605
IC602
TP603
TP604
CN604
CN603
CN602
CN601

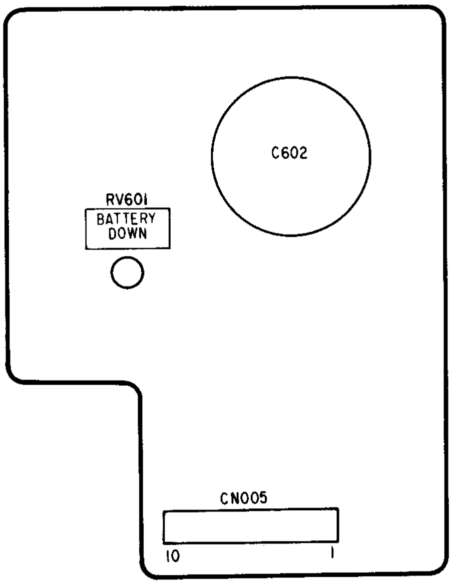
AR-2 Board (Component Side)


RV102
PB FREQUENCY CARACTERISTIC (CH1)
LV101
PB Y TRAP
CN112
1
4
TP104
RV101
REC Y REC CURRENT
TP101
TP102
24
13
25
12
IC101
RV401
AFM DEVIATION
48
37
36
1
RV105
REC C REC CURRENT
RV402
AFM CARRIER FREQUENCY
IC401
36
1
37
48
RV103
REC ATF REC CURRENT (CH2)
TP103
RV106
PB FREQUENCY CARACTERISTIC
12
25
13
24
RV104
AFM REC CURRENT
8
CN009
1
8
CN008
1

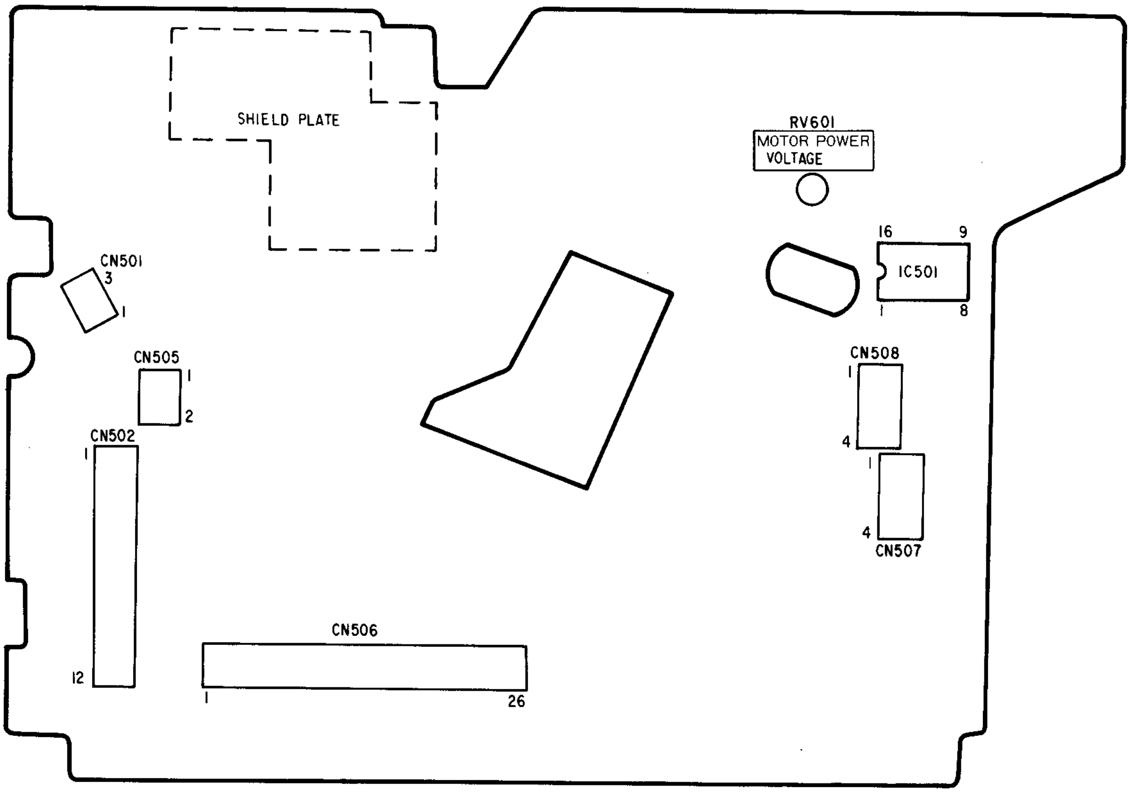
SV-14 Board (Solder Side)


CN512
1
4
TP501
TP502
TP503
TP505
RV502
SWITCHING POSITION
RV504
CAPSTAN FREE SPEED (SP)
TP507
RV503
CAPSTAN FREE SPEED (LP)
RV501
PB PAUSE DELAY TIME
14
8
IC505
1
7
24
13
IC501
1
12

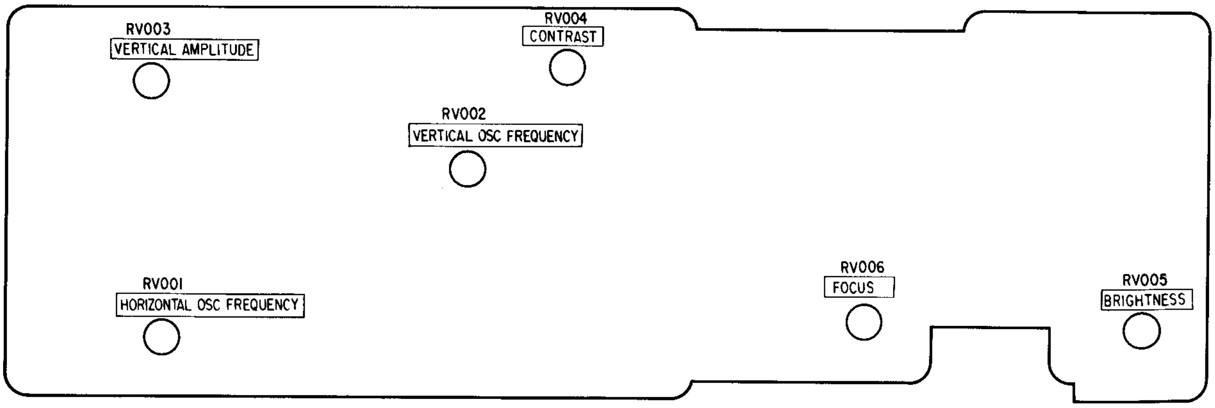
HS-5 Board (Solder Side)


C602
RV601
BATTERY DOWN
CN005
10
1

MC-8 Board (Solder Side)


SHIELD PLATE
RV601
MOTOR POWER VOLTAGE
16
9
IC501
1
8
CN501
3
1
CN505
1
2
CN502
1
12
CN508
1
4
1
4
CN507
CN506
1
26

VF-4 Board (Component Side)


RV003
VERTICAL AMPLITUDE
RV004
CONTRAST
RV002
VERTICAL OSC FREQUENCY
RV001
HORIZONTAL OSC FREQUENCY
RV006
FOCUS
RV005
BRIGHTNESS